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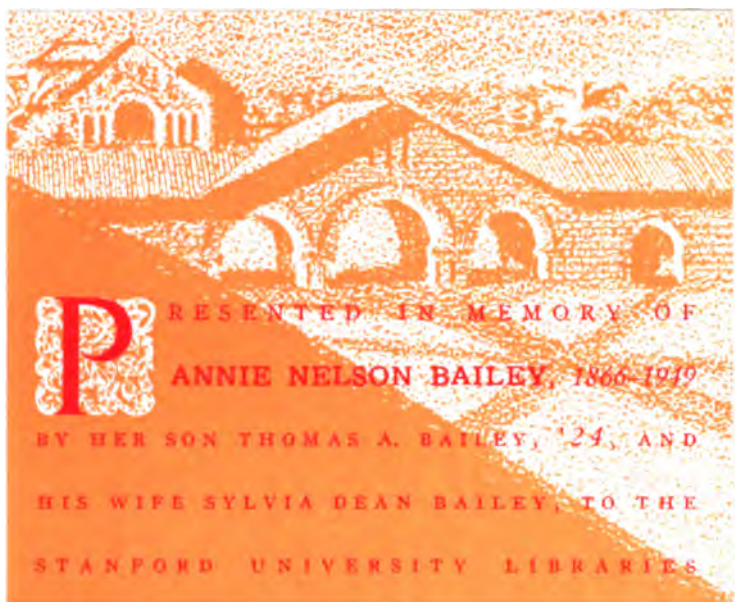
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The Atlantic University Publications, No. 20

Select Discussions  
of  
Race Problems

*A Collection of*

Papers of Especial Value in the Study  
of Negro American Problems

Edited by  
J. M. G. [illegible]

THE ATLANTIC UNIVERSITY PRESS  
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The Atlanta University Publications, No. 20

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# Select Discussions of Race Problems

A Collection of Papers of Especial Use in Study of  
Negro American Problems; with the Proceedings of  
the Twentieth Annual Conference for Study of Negro  
Problems, held at Atlanta University, May 24, 1915

Edited by

J. A. Bigham, A. M.

Professor of Economics and Sociology, Atlanta University

The Atlanta University Press  
ATLANTA, GA.  
1916





ARGUMENTS for difference due to race, sex and genius will henceforward need to be based upon new data, really scientifically treated and not on the older statements.

—*Mall.*



WHEN the bulky literature of this subject is carefully sifted, little remains that will endure serious criticism; and I do not believe that I claim too much when I say that the whole work on this subject remains to be done.

—*Boas.*



## Select Discussions of Race Problems

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# **The Twentieth Annual Conference**

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## **A Review of Twenty Years' Study**

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### **PROGRAM**

**Monday, May 24, 1915**

**First Session, 10:00 a. m.**

**Gleanings from a Score of Years,**

**Rev. Frederick H. Means, Madison, Me.**

**The National League on Urban Conditions,**

**Dr. George E. Haynes, Director, Nashville, Tenn.**

**Second Session, 11:30 a. m.**

**(Separate meetings for men and women.)**

**Address to Women,**

**By Mrs. J. H. Whittaker, Tuskegee Institute, Ala.**

**Address to Men,**

**By Dr. L. B. Palmer, Atlanta.**

**Third Session, 3:30 p. m.**

**Annual Mothers' Meeting and Exercises by children of the Gate City  
Free Kindergartens.**

**Address by Rabbi David Marx, Atlanta.**

**Fourth Session, 8:00 p. m.**

**Inter-racial Co-operation for Human Betterment in the South,**

**By Mrs. J. D. Hammond, Augusta.**

**Discussion, led by Mr. Philip Weltner, Atlanta.**

## **Preface**

Twenty years ago there was begun at Atlanta University a series of studies of the Negro race problems in the United States. The application of careful thought to race questions was not at that time widely practiced; and even today, there are not many serious students of the subject. Here and there, however, a few of the ablest authorities have given consideration to some of the fundamental phases of Negro problems and some substantial material has accumulated. In the leading of earnest attention into this field of study the belief is possibly justified that the years of work carried on here has had a share. Some of the products of these recent researches on race questions are here presented in the hope that they may prove helpful in working out practical and satisfactory methods of meeting the many difficult race relations.

Only those papers have been chosen which were considered of unquestioned authority upon the topics treated and which ought to be made easily accessible in their original form to a wider circle of readers. The discussions of the general race problems here found will help clarify the principles underlying the Negro race problem. The classroom student, the social worker and the interested general reader may, with the aid of these general discussions, be better able to penetrate the hindering maze of biological and social theories of race inferiority which the early enthusiasms over the theory of the evolution of man left behind.

The present volume brings to an end the second ten-year cycle of these studies. A review of the history of the whole series is given within. The value of most of these studies must be largely credited to Dr. W. E. B. Du Bois, so long

their editor, and later to his associate, Mr. A. G. Dill. We wish to express our thanks to the authors and publishers who have so kindly given their consent to make reprints of the papers appearing in this number.

In the future we plan to distinguish more sharply between the Annual Conferences for the Study of Negro Problems and the Atlanta University Publications. We shall continue the Annual Conferences as a part of the Commencement Week program and publish the proceedings in the Bulletin. The Atlanta University Publications will be issued only upon the completion of further investigations of the Negro problems involving original research. With the limited resources at our disposal it is impossible to complete such studies and provide for their publication annually. We earnestly solicit aid from interested persons that the work which has made such a valuable contribution to exact knowledge of Negro conditions may be carried vigorously forward.

## **Resolutions**

The following resolutions are the expression of the members, delegates and attendants upon the session of the twentieth annual Conference:

As a series of practical conclusions that have been reached, or emphasized anew from the Atlanta University Conferences of the last ten years we mention the following:

1. With improvement in conditions of life, the death rate, while higher than that of the white people in the United States, has shown a tendency downward. There is no scientific basis, according to the best authorities, for believing the Negro to be physically inferior to other races.

2. In spite of the hindrances to the Negro's economic and industrial advance we note with pleasure his demonstration of a growing fitness for the modern economic struggle, by his increase in home ownership, economic co-operation in business, and gradual entrance into better paid occupations.

3. The colleges of this country have done a great service in sending forth five thousand Negro graduates, who by precept and by example, have done much to improve the moral, the social and the economic tone of the Negro American people. (Page 100 of Report No. 15 on "The College-Bred Negro American.")

4. In spite of the gradual increase in the enrollment and attendance of Negro children in the public schools of the South, it is still true that over 50 percent of those from six to fourteen years of age are not securing even a fair beginning of a common school education, indicating how great a task in education of Negro children is yet before the South.

5. The ideals of the Negro are becoming more definite, and his moral standards are being steadily raised.

6. While criminal statistics are insufficient to prove that there has been actual increase in the proportion of Negro criminals, we note that conditions which make criminals of Negroes are painfully neglected; but take courage in the evidence of an awakening public conscience in this matter, and the tendency toward inter-racial co-operation for human betterment.

7. The faithful and able work put into the Annual Atlanta University Conferences and reports, and the comparatively small amounts of money expended upon them has been proved to be abundantly worth while by the results.

8. These Social Studies have furnished one of the most important contributions, in tested facts and scientific conclusions, towards a sound foundation for the advancement of the Negro in the United States.

9. For the coming years, we would emphasize the importance of continuing these studies and reports, and the necessity of increased practical efforts, for social, economic and spiritual betterment of the Negro American.

Signed by the Committee on Resolutions,

FREDERICK H. MEANS,

GEORGE E. HAYNES,

J. A. BIGHAM.

## A Review of the Atlanta University Conferences and Social Studies

By Rev. F. H. Means

These Conferences began in 1896. The investigation of social conditions upon which they are based began in 1895.

It was an auspicious beginning in two respects. The social studies and proceedings of the Conference together put before the public most valuable data bearing upon the advancement of the Negro. The co-operation in this effort of graduates of Atlanta University, members of the faculty, and the trustees and supporters brought many able minds to bear upon these subjects.

*First*, then, for a word of history. At a public meeting in the interest of Atlanta University held at Trinity Church in Boston, in 1895, the list of speakers included, with President Bumstead, Mr. Richard R. Wright, Sr., and Rev. Joseph E. Smith, graduate trustees, then as now. In conversation of these with another man to whom the Conferences owe much, Mr. George G. Bradford of Boston, it was decided to begin these studies, making them at first merely an "Investigation of City Problems." The trustees gave their approval in July, 1895, and the first Conference was planned to be held during the Atlanta Exposition in November, 1895, but afterwards changed to the Commencement season of 1896. Officers of the Conference were chosen, including Mr. Bradford, who had done much of the work upon the first year's report, as the secretary.

*Second*, a word as to the object in view. Although limited in scope at the start, these studies had a much broader and higher aim than first appeared, like Pres. "Jim" Hill's first railroad, which bore some such name as the St. Paul and Pacific, when it stretched only a score or two of miles across the prairies. A large part of the purpose has always been to put dealing with facts in the place of prejudice, scientific knowledge in the place of guesswork, and carefully studied recommendations in the place of haphazard and unrelated efforts.

*Third*, as to the line of subjects to be studied and discussed. The first two were related subjects, "Mortality among Negroes in Cities," in 1896, and "Social and Physical Conditions of Negroes in Cities," in 1897. The papers presented at the first Conference were rather general in character, but there were facts enough to establish one conclusion, at least, namely that there had been "an alarming increase in the death rate of the Negro population of cities and large towns, from such diseases as consumption and pneumonia, due in a great degree to ignorance, poverty, negligence and intemperance."



## 10 A Review of the Atlanta University Conferences

It was decided to "continue the search for exact data on a larger scale." Graduates of other institutions, especially of Fisk, Berea, Lincoln, Spelman, and Howard, were invited to participate, and unlike the first Conference, the report of the second contained papers written almost exclusively by colored men and women. Among these were Mr. Butler R. Wilson of Boston, Prof. Matthews of Atlanta, Mrs. Logan of Tuskegee, Rev. Joseph Smith of Chattanooga, Rev. H. H. Proctor and Dr. H. R. Butler of Atlanta, and many others.

*Fourth.* Before the second Conference was held, the U. S. Government, through its Department of Labor, Colonel Carroll D. Wright then Commissioner, took hold to help. The data gathered were tabulated and turned over to the Department of Labor for printing in its May Bulletin. This recognition and assistance helped to put the Conference squarely on its feet, and at the same time gave a much wider circulation to the valuable data secured. The conclusions and recommendations of the Conference in 1897 made the principal causes of excessive mortality,—i.e. ignorance and neglect,—more plain. It took some of the blame off of environment and placed it squarely on the Negro himself, and also made very definite suggestions about ways of overcoming ignorance in sanitary matters. The matter of home-training and support, the importance of day nurseries, of kindergartens and of meetings for mothers first secured treatment in this second Conference, and these and allied subjects have been effectively treated at each of the Conferences since held, in the programs of the "Annual Mothers' Meetings." No part of the Conference has been of greater value locally than these inspiring, helpful and encouraging sessions.

*Fifth.* With the preparation for the third Conference, to be held in 1898, and the issuing of the third report, published that same year, this series of social studies entered upon a new phase. Dr. W. E. B. DuBois, who became Professor of Sociology in 1897 in Atlanta University, was also chosen that same year as Corresponding Secretary of the Atlanta Conference. The topic for that year was "Efforts of American Negroes for their own Social Betterment." Facts with regard to churches, secret and mutual benefit orders, and more purely benevolent organizations were all considered. Statistics classified in compact form, were made graphic by tables and charts for display at the Conference, and valuable communications were received from several forms of co-operative business. In all 236 typical organizations were considered. The need and the difficulty of securing co-operation in all these lines, among those who were either born in slavery or were the children of slaves, were made very clear, and explicit warnings and instructions were embodied in the resolutions adopted that year. At the close of these we find the following remark: "Continued observation of the Negro death rate in Southern cities shows that it is still exces-

sive. There is, however, no increase in the rate, and in many cases a decrease is to be noted in the last three years."

*Sixth.* Two important studies were made for the fourth and fifth Conferences. In 1899 reports were made upon "Negroes in Business," and published, along with the proceedings of the Conference, as usual. The data furnished by this survey are said to have "greatly facilitated" the formation of a large and influential business men's organization among the Negroes and doubtless helped in other less conspicuous but equally stimulating efforts.

More important than this, however, and perhaps most important to the purpose of Atlanta University of any of the topics thus far, was the study of "The College-Bred Negro" made and published in 1900. The graduates of ten or more institutions for the higher education of the Negroes were united in making it. The conclusion reached was that "the colleges of this country have done a great service in sending forth five thousand Negro college graduates, who by precept and by example have been of great service in lifting the moral, social and economic tone of the American people."

*Seventh.* The next investigation, limited in its first intent to the Negro Teacher, was broadened to include the whole wide field of "The Negro Common School." It was a great subject, adequately and thoroughly treated, at a cost of \$250, exclusive of the Conference and publication costs. The report is a solid pamphlet of 120 pages entirely devoted to presenting the data and establishing the conclusions of the Conference which are printed with its program in a couple of supplementary pages. The Resolutions (1) Call attention to the fact that only 1,000,000 out of 3,000,000 of Negro children of school age were then *regularly attending* school, and only for a session of a few months. (2) Point out that in spite of lack of opportunity to learn, their ignorance is made a barrier to voting. (3) Declare the injustice of reducing "the already meagre school facilities of Negroes," especially in view of the fact shown by the Report that moneys paid in school taxes, direct or indirect, since the Civil War by Negroes would suffice to repay what has been spent by the South on the Negro school system during the same period. This report (on the Negro Common School) fully justifies the claim made in connection with the previous year's report, "We *study* the problem that *others discuss*." How necessary it is to have such study appears in a glare of light when we find the misstatements that are constantly being made.

*Eighth.* This is a good place to speak of the *entire impartiality* of the Atlanta Conference studies. They are not undertaken to find support for positions and propositions to which any one is already committed or to buttress any special policy. "Special pleading" has been barred out and *all* the facts bearing upon each subject have been sought.

## 12 A Review of the Atlanta University Conferences

*Ninth.* Thus it becomes all the more a matter of great significance when the reports furnish conclusive evidence of certain great outstanding features of an encouraging character with reference to the Negroes. Two such were brought out in the study of the Negro Common School. The table on page 43 of that report shows the actual increase in the number of Negro children enrolled in the public schools of the South from 1866-1899. Starting at 90,000, it got above the half million mark in eleven years, and in seven years more passed one million (1884). It has never been below the million mark since 1884, but it has gone up from that only very slowly, not reaching one million and a half until 1898, a fifteen years' climb. Not until 1904-05 did it pass 1,600,000, and 1,700,000 in 1908-09. (This is enrollment, not average attendance.)

Negro illiteracy, as a natural result has shown a great decrease. In the 16 slave-holding states of the South, at the time of emancipation, 95 per cent of the Negroes (of age of literacy and over) could neither read nor write. At the time of the Conference of 1901, of which we have been speaking, the percentage had been reduced to 44.5, and at the time of the latest figures obtainable it is counted at 30.4.

*Tenth.* I must pass over rapidly the next three reports, those of 1902, '03 and '04, which took up respectively "The Negro Artisan," "The Negro Church" and "Negro Crime." In the careful and thorough handling of each and every one of these topics we can see the trained skill and constructive leadership of Dr. DuBois. He remained until his connection with the University ceased in 1910, the faithful and efficient corresponding secretary of the Conference, and he then continued as advisory director and editor, with the assistance of Mr. Augustus G. Dill. Not only was the work of gathering, compiling and tabulating the facts and publishing them done by Dr. DuBois or under his direction, but two other important features or departments of this work, considered as a whole, relied largely on his efforts.

*Eleventh.* One might be called the publicity department. To get the reports circulated when once in print, to furnish facts and materials to those who were all the time writing in for special information, to compile the elaborate bibliographies that were so necessary to give access to the whole body of growing literature on these and allied topics, all this made a great and a complicated task which was well performed. There might also be added and included here, to make our picture complete, the lectures that were given by Dr. DuBois or other members of the faculty, both south and north, on topics that formed part of this program. At Fisk University, Hampton Institute, American Negro Academy, at the American Academy of Political and Social Science and at clubs in New York and Boston these addresses were delivered.

*Twelfth.* By all these methods and agencies, always hampered and

sometimes on the point of being severely curtailed for lack of funds, a wide currency was being given to the results of all this labor. It won the approval and support of a dozen or more of the leading college presidents of the country including Presidents David Starr Jordan, Stanley Hall, Franklin Carter of Williams, Harris of Amherst, and of Presidents Hyde, Hadley and Eliot. A still wider currency and endorsement are well attested by the two words of commendation which follow, the first being from the publications of the Southern History Association in March, 1901: "The very best and most advanced work on the sociological conditions of the Negro, is being done by Atlanta University through the courses of study, through its teaching corps, through its publications and through its stimulus to the Negro Conference that meets in that city." The other is from the London *Spectator* of March, 1900: "The future of the Negro population of the United States is a problem charged with such serious possibilities that any light which can be shed upon it by an examination of present conditions and tendencies deserves a most cordial welcome. This work is being done with much intelligence, discrimination and assiduity, at the instance and under the inspiration of the Atlanta University." Since both of these words were spoken within five years of the holding of the first Atlanta Conference, we can see how quickly and how surely it won its way into a place of esteem among students, thinkers and leaders, and that place has become more assured in the fourteen years since.

*Thirteenth.* At the close of the first decade, in 1905, it was very wisely decided to devote the Conference to a discussion of "Results, Methods and Plans for the Future." A new helper came to us that year, namely, Prof. Walter F. Willcox of Cornell University. By way of review of the ten years certain conclusions were formulated, among which we find these facts stated. "The investigations of the last ten years seem on the whole to indicate: (c) A large but slowly decreasing Negro mortality; (d) An encouraging decrease of infant and child mortality; (h) A rapid decrease in illiteracy, especially in cities, and a large percentage of success among college-bred Negroes; (k) A large increase of crime up until 1895, and a considerable decrease (in the decade) since that date."

The report for that year consisted of the most complete bibliography of the Negro American ever published up to that date, covering 73 pages of titles and including periodical literature as well as books and pamphlets.

The Mothers' Meeting for that year took up questions of child study and the kindergarten, with a very immediate practical application to the needs of Atlanta. As a result of Miss Gertrude Ware's leadership of the "consultation" about "a colored kindergarten for the city," the Gate City Free Kindergarten Association was organized and two free kindergartens opened in the city under its auspices, which number has since been increased to five.

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*Fourteenth.* The discussion of plans at this Conference of 1905 led to the adoption for the studies of the next ten years of a cycle of topics repeating in a general way the studies of the first ten years, making them, however, more logical in order, more systematic and more comprehensive. I have purposely devoted most of my time to gleanings from the first ten years of the social studies and the Conferences to show their genesis, their aim, their leadership and the conclusions reached and results achieved. The work of the last ten years can be reviewed much more briefly. This does not mean that it is less important. Far from it. Experience added completeness to the work and each year's report, besides being more full of data, had the added benefit of comparison with the statements presented ten years before. Inaccuracies were corrected, mistaken inferences were set right, and in all points an advanced standard was maintained.

In 1907 the Carnegie Foundation contributed \$500 towards the expenses of the Conference preparatory work and printing. From 1908 to 1913 inclusive, the John F. Slater Fund contributed largely to the cost, and our great indebtedness to the trustees of that fund was indicated each year by the addition to the title on the cover page of the words, "Under the patronage of the Trustees of the John F. Slater Fund."

This present year, in the absence of any help from the Slater Fund, \$500 has been received from the Phelps-Stokes Fund. These "grants in aid" are practically indispensable to the continuance of the Conference social studies. They have made the standards of the last decade possible of attainment.

The studies planned for the second decade were:

The Negro Physique . . . . .	1906
The Negro Family . . . . .	1907
Negro Organizations . . . . .	1908
The Economic Development of Negroes . . . . .	1909, 1910
The Education of Negroes . . . . .	1911
The Political Power . . . . .	1912
The Negro Church . . . . .	1913
Crime Among Negroes . . . . .	1914
Methods and Results . . . . .	1915

This order and content of the studies has been modified somewhat in the working out of the plan. The study of the Family was put off one year and the topics for the two years following were put in ahead of it and also reduced in time to one year, and in scope, to the topic of "Economic Co-operation among Negro Americans." Education was expanded and given two years' treatment, as before: the report on "The College-Bred Negro," 1910, and that on "The Common School and the Negro American" in 1911, taking the place of the single topic first planned. "The Negro American Artisan" was put in place of "The Political Power of Negroes" for 1912,

and the report just issued on "Morals and Manners among Negro Americans" covers and includes the two topics originally assigned for the two years 1912 and 1913.

The benefits of comparisons with earlier investigations are illustrated by this instance. The average death rate of Negroes in the larger cities was found to have decreased from 35.88 per thousand in 1890 to 34.08 per thousand in 1900. But it was also discovered that nine-tenths of the recorded Negro death rates in 1900 referred to city population, while four-fifths of the Negroes live in the country. Where death rates in the country districts were recorded they were found not to exceed 22 per thousand. It thus became evident that although the Negro death rate in the South does exceed that of the whites, it is not so far in excess as had been supposed. These revised facts and others helped to correct the conclusions drawn in books such as Hoffman's "Race Traits and Tendencies of the American Negro," that the race is inferior to others in physical vitality. (See paragraph 5, Resolutions of 1906, page 110 of Report.) Dr. Franz Boas, Professor of Anthropology in Columbia University, gave the weight of his opinion strongly to the denial of Negro racial inferiority and his approval to the resolutions of the Conference. Included in these were encouraging statements as to hospitals and physicians among the Negroes. The next year, 1907, the resolutions made a strong appeal, based on a thorough inductive study, for more of "Economic Co-operation." The next year the college classes of 1909-1910 in Atlanta University were given most of the task of studying prevailing conditions of marriage and divorce, home and family life, and related questions. The after effects of slavery were studied and existing evil conditions were boldly faced, as in this statement: "The United States had in 1900 10.7 per cent of illiteracy, 46.5 per cent of home ownership, and perhaps 2 per cent of illegitimate births. The [American] Negro had in 1900, 44.5 per cent of illiteracy, 20.3 per cent of home ownership and probably, though not certainly, 25 per cent of illegitimacy." The great importance of right teaching and training was strongly emphasized.

Studies of Social Betterment in 1909 took a wide range and caused a much greater variety of topics than the similar study in 1898. The organizations studied included the church, and the conclusion was reached that more of institutional and reformatory work was called for, helped out by trained social workers. The strong tendency in this direction in the teaching and example of the present head of the sociological work in this University are, it seems to me, to be strongly commended.

Two Conferences and reports on Education followed, and the resolutions, signed by an unusual number of leading educators, in the report on "The College-Bred Negro," made very definite and specific recommendations.

## 16      A Review of the Atlanta University Conferences

"The Negro Artisan" and "Morals and Manners among Negro Americans" are the latest publications in this most important series of reports. The latter study contains less of statistics, but much more of full reporting from different states and localities. As the concluding paragraph states: "With all its shadows and questions one cannot read this study without a distinct feeling of hope and courage." The resolutions of 1913 stated, over the signatures of Dr. DuBois, Mr. L. H. Williams of Macon, Ga., and Mr. Augustus G. Dill, that "the hope of the future in moral uplift lies in thorough common school training for Negro children, respect and protection for Negro women, widened industrial opportunity for Negro men, and systematic effort to lessen race prejudice."

---

Standing, as we do today, at the close of these "Social Studies of a Score of Years," we can have no hesitation in affirming:

1. That the faithful and able work put into these twenty annual Conferences and eighteen reports, and the comparatively small amount of money expended upon them (not over \$1,200 per annum), have been abundantly justified by the results.
2. That they have furnished one of the most important contributions, in tested facts and scientific conclusions, towards a sound foundation for the "Advancement of the Negro" in the United States.

# I

## Races of Men<sup>1</sup>

It is doubtful if many of the persons in the United States who are eagerly and often bitterly discussing race problems have followed very carefully the advances which anthropological science has made in the last decade. Certainly the new knowledge has not yet reached the common schools in the usual school histories and geographies. As Ripley says:

It may smack of heresy, to assert in face of the teaching of all our textbooks on geography and history, that there is no single European or white race of men; and yet that is the plain truth of the matter. Science has advanced since Linnæus' single type of *Homo Europæus albus* was made one of the four great races of mankind. No continental group of human beings with greater diversities or extremes of physical type exists. That fact accounts in itself for much of our advance in culture.<sup>2</sup>

In our school days most of us were brought up to regard Asia as the mother of European peoples. We were told that an ideal race of men swarmed forth from the Himalayan highlands, disseminating culture right and left as they spread through the barbarous west. The primitive language, parent to all of the varieties of speech—Romance, Teutonic, Slavic, Persian, or Hindustanee—spoken by the so-called Caucasian or white race, was called Aryan. By inference this name was shifted to the shoulders of the people themselves, who were known as the Aryan race. In the days when such symmetrical generalizations held sway there was no science of physical anthropology; prehistoric archæology was not yet. Shem, Ham, and Japhet were still the patriarchal founders of the great racial varieties of the genus *Homo*. A new science of philology dazzled the intelligent world by its brilliant discoveries, and its words were law. Since 1860 these early inductions have completely broken down in the light of modern research; and even today greater uncertainty prevails in many phases of the question than would have been admitted possible twenty years ago.<sup>3</sup>

So, too, a leading Italian anthropologist says:

Whenever there has been any attempt to explain the origin of civilization and of the races called Aryan, whether in the Mediterranean or

<sup>1</sup> Reprinted from the Atlanta University Publication No. 11, W. E. B. DuBois, editor.

<sup>2</sup> Ripley, *Races of Europe* (New York, 1899), p. 103.

<sup>3</sup> Ripley, pp. 452-3.



in Central Europe, all archæologists, linguists, and anthropologists have until recent years been dominated by the conviction that both civilization and peoples must have their unquestionable cradle in Asia.<sup>1</sup>

As illustrating the former tendency, Sergi adds:

A celebrated anthropologist, when measuring the heads of the mummies of the Pharaohs preserved in the Pyramids, wrote that the Egyptians belonged to the white race. His statement meant nothing; we could construct a syllogism showing that the Egyptians are Germans, since the latter also are fair. De Quatrefages classified the Abyssinians among the white races, but if they are black, how can they be white?<sup>2</sup>

The new anthropology, while taking into account all the older race insignia, like color, hair, form of features, etc., has added to these exact measurements of the underlying bony skeleton and other carefully collected data. Of these new measurements the form of the head is being most emphasized today.

The form of the head is for all racial purposes best measured by what is technically known as the cephalic index. This is simply the breadth of the head above the ears expressed in percentage of its length from forehead to back. Assuming that this length is 100, the width is expressed in a fraction of it. As the head becomes proportionately broader—that is, more fully rounded, viewed from the top down—this cephalic index increases. When it rises above 80, the head is called brachycephalic, when it falls below 75, the term dolichocephalic is applied to it. Indexes between 75 and 80 are characterized as mesocephalic.<sup>3</sup>

Based on the new measurements and discoveries, the chief conclusions of anthropologists today as to European races are as follows:

1. The European races, as a whole, show signs of a secondary or derived origin; certain characteristics, especially the texture of the hair, lead us to class them as intermediate between the extreme primary types of the Asiatic and the Negro races respectively.

2. The earliest and lowest strata of population in Europe were extremely long-headed; probability points to the living Mediterranean race as most nearly representative of it today.

3. It is highly probable that the Teutonic race of northern Europe is merely a variety of this primitive long-headed type of the stone age; both its distinctive blondness and its remarkable stature having been acquired in the relative isolation of Scandinavia through the modifying influences of environment and of artificial selection.

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<sup>1</sup> Sergi, *The Mediterranean Race* (London, 1901), p. 1.

<sup>2</sup> Sergi, p. 85.

<sup>3</sup> Ripley, p. 87.

4. It is certain that, after the partial occupation of western Europe by a dolichocephalic Africanoid type in the stone age, an invasion by a broad-headed race of decidedly Asiatic affinities took place. This intrusive element is represented today by the Alpine type of Central Europe.<sup>1</sup>

What was now this Mediterranean race whence the Europeans were primarily derived? Sergi adds:

In opposition to the theory of a migration from the north of Europe to the west and then to Africa, I am, on the contrary, convinced that a migration of the African racial element took place in primitive times from the south towards the north. The types of Cro-Magnon, L'Homme-Mort, and other French and Belgian localities, bear witness to the presence of an African stock in the same region in which we find the dolmens and other megalithic monuments erroneously attributed to the Celts.<sup>2</sup>

He adds:

We have no reason to suppose that the movement of emigration in the east of Africa stopped at the Nile valley; we may suppose that it extended towards the east of Egypt, into Syria and the regions around Syria, and thence into Asia Minor. It is possible that in Syria this immigration encountered the primitive inhabitants, or a population coming from northern Arabia, and mingled with them or subjugated them.<sup>3</sup>

Sergi's conclusions are:

1. That the primitive populations of Europe originated in Africa.
2. The basin of the Mediterranean was the chief center of the movement whence the African migration reached central and northern Europe.
3. From this great Eurafrian stock came—
  - (a) The present inhabitants of northern Africa.
  - (b) The Mediterranean race.
  - (c) The Nordic or Teutonic race.
4. These three varieties of one stock were not "Aryan," nor of Asiatic origin.
5. The primitive civilization of Europe is Afro-Mediterranean, becoming eventually Afro-European.
6. Greek and Roman civilization were not Aryan but Mediterranean.<sup>4</sup>

This primitive race was a colored race:

If, therefore, as all consistent students of natural history hold today, the human races have evolved in the past from some common root type, this predominant dark color must be regarded as the more primitive. It is not permissible for an instant to suppose that 99 per cent of the human

<sup>1</sup> Ripley, pp. 457-470.

<sup>2</sup> Sergi, p. 70.

<sup>3</sup> Sergi, p. 144.

<sup>4</sup> Sergi, pp. v-vii.

species has varied from a blond ancestry, while the flaxen-haired Teutonic type alone has remained true to its primitive characteristics.<sup>1</sup>

The types of Greek and Roman statuary:

Do not in the slightest degree recall the features of a northern race; in the delicacy of the cranial and facial forms, in smoothness of surface, in the absence of exaggerated frontal bosses and supra-orbital arches, in the harmony of the curves, in the facial oval, in the rather low foreheads, they recall the beautiful and harmonious heads of the brown Mediterranean race.<sup>2</sup>

Of the part of this great stock which remained in North Africa, Sergi says:

The area of geographical distribution of these African populations is immense, for it reaches from the Red Sea to the Atlantic, from the equator, and even beyond the equator to the Mediterranean. In this vast area we find, when we exclude racial mixtures, that the physical characters of the skeleton, as regards head and face are uniform, but that the physical characters of the skin and intermediate parts, that is to say, the development and form of the soft parts, vary. This uniformity of the cranio-facial skeletal characters, which I consider the guiding thread in anthropological research, has led me to regard as a single human stock all the varieties distributed in the area already mentioned. In the varying cutaneous coloration I see an effect of temperature, of climate, of alimentation, and of the manner of life.<sup>3</sup>

### The Negro Race

It has usually been assumed that of all races the Negro race is, by reason of its pronounced physical characteristics, easiest to distinguish. Exacter studies and measurements prove this untrue. The human species so shade and mingle with each other that not only indeed is it impossible to draw a color line between black and other races, but in all physical characteristics the Negro race cannot be set off by itself as absolutely different. This was formerly assumed to be the case even by scientists and led to the queer *reductio ad absurdum* that very few real pure Negroes existed even in Africa. As Ratzel points out:

The name "Negro" originally embraces one of the most unmistakable conceptions of ethnology—the African with dark skin, so-called "woolly" hair, thick lips and nose; and it is one of the prodigious, nay amazing achievements of critical erudition to have latterly confined this (and that even in Africa, the genuine old Negro country) to a small dis-

<sup>1</sup> Ripley, p. 465.

<sup>2</sup> Sergi, p. 20.

<sup>3</sup> Sergi, pp. 248-9.

trict. For if with Waitz we assume that Gallas, Nubians, Hottentots, Kaffirs, the Congo races, and the Malagasies are none of them genuine Negroes, and if with Schweinfurth we further exclude Shillooks and Bongos, we find that the continent of Africa is peopled throughout almost its whole circuit by races other than the genuine Negro, while in its interior, from the southern extremity to far beyond the equator it contains only light-colored South Africans, and the Bantu or Kaffir peoples.

Nothing then remains for the Negroes in the pure sense of the word save, as Waitz says, "a tract of country extending over not more than 10 or 12 degrees of latitude, which may be traced from the mouth of the Senegal river to Timbuctoo, and thence extended to the regions about Sennaar." Even in this the race reduced to these dimensions is permeated by a number of people belonging to other stocks. According to Latham, indeed, the real Negro country extends only from the Senegal to the Niger. If we ask what justifies so narrow a limitation, we find that the hideous Negro type, which the fancy of observers once saw all over Africa, but which, as Livingstone says, is really to be seen only as a sign in front of tobacco-shops, has on closer inspection evaporated from almost all parts of Africa, to settle no one knows how in just this region. If we understand that an extreme case may have been taken for the genuine and pure form, even so we do not comprehend the ground of its geographical limitation and location; for wherever dark woolly-haired men dwell, this ugly type also crops up. We are here in presence of a refinement of science which to an unprejudiced eye will hardly hold water.<sup>1</sup>

Three things have been especially emphasized as characteristic of Negroes: their color, hair and features. As to color in human beings, Ripley says:

One point alone seems to have been definitely proved: however marked the contrasts in color between the several varieties of human species may be, there is no corresponding difference in anatomical structure discoverable.

Pigmentation arises from the deposition of coloring matter in a special series of cells, which lie just between the translucent outer skin or epidermis and the inner or true skin known as the cutis. It was long supposed that these pigment cells were peculiar to the dark-skinned races; but investigation has shown that the structure in all types is identical. The differences in color are due, not to presence or absence of the cells themselves, but to variation in the amount of pigment therein deposited. In this respect, therefore, the Negro differs physiologically, rather than anatomically, from the European or the Asiatic.<sup>2</sup>

<sup>1</sup> Ratzel, *The History of Mankind*; tr. from 2d German ed. by A. J. Butler (London, 1897), vol. 2, p. 313.

<sup>2</sup> Ripley, p. 58.

The cause of this physiological difference is climate, the rays of the sun, humidity, and such natural forces:

The best working hypothesis is . . . that this coloration is due to the combined influences of a great number of factors of environment working through physiological processes, none of which can be isolated from the others. One point is certain, whatever the cause may be—that this characteristic has been very slowly acquired, and has today become exceedingly persistent in several races.<sup>1</sup>

Sergi says of the Mediterranean race:

We may therefore conclude that as residence under the equator has produced the red-brown and black coloration of the stock, and residence in the Mediterranean the brown colour, so northern Europe has given origin to the white skin, blond hair, and blue or grey eyes. I believe we may consider this a beautiful example of the formation and variation of external characters among a section of the human race which from time immemorial has been diffused by migration between the equator and the arctic circle, and has formed its external characters according to the variations of latitude and the concomitant external conditions.<sup>2</sup>

As to hair, we are told that—

The two extremes of hair texture in the human species are the crisp, curly variety so familiar to us in the African Negro; and the stiff wiry straight hair of the Asiatic and the American aborigines. These traits are extremely persistent; they persevere oftentimes through generations of ethnic inter-mixture. It has been shown by Pruner Bey and others that this outward contrast in texture is due to, or at all events coincident with, morphological differences in structure. The curly hair is almost always of a flattened, ribbon-like form in cross section, as examined microscopically; while, cut squarely across, the straight hair more often inclines to a fully rounded or cylindrical shape. Moreover, this peculiarity in cross section may often be detected in any crossing of these extreme types. The result of such intermixture is to impart a more or less wavy appearance to the hair, and to produce a cross section intermediate between a flattened oval and a circle. Roughly speaking, the more pronounced the flatness the greater is the tendency toward waviness or curling, and the reverse.<sup>3</sup>

Anthropologists today are putting less stress on the development of the soft parts of the human frame—the skin, nose, cheeks and lips, but have come to regard the cranio-facial skeletal characteristics as “the

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<sup>1</sup> Ripley p. 62.

<sup>2</sup> Sergi, p. 254.

<sup>3</sup> Ripley, p. 457.

guiding thread in anthropological research."<sup>1</sup> Even here the matter of absolute size and weight is of minor importance:

Equally unimportant to the anthropologist is the absolute size of the head. It is grievous to contemplate the waste of energy when, during our civil war, over one million soldiers had their heads measured in respect of this absolute size; in view of the fact that today anthropologists deny any considerable significance attaching to this characteristic. Popularly, a large head with beetling eyebrows suffices to establish a man's intellectual credit; but like all other credit, it is entirely dependent upon what lies on deposit elsewhere. Neither size nor weight of the brain seems to be of importance. The long, narrow heads, as a rule, have a smaller capacity than those in which the breadth is considerable, but exceptions are so common that they disprove the rule. Among the earliest men whose remains have been found in Europe, there was no appreciable difference from the present living populations. In many cases these prehistoric men even surpassed the present living population in the size of the head. The peasant and the philosopher can not be distinguished in this respect. For the same reason the striking difference between the sexes, the head of the man being considerably larger than the head of the woman, means nothing more than avoirdupois, or rather it seems merely to be correlated with the taller stature and more massive frame of the human male.<sup>2</sup>

Great stress used to be put on the facial angle, but we are told now that—

Prognathism, that is to say the degree of projection of the maxillary portion of the face, is a characteristic trait of certain skulls; however, it does not seem to play so important a part in the classification of races as anthropologists had thought twenty or thirty years ago. It presents too many individual varieties to be taken as a distinctive character of race.<sup>3</sup>

We have, then, in the so-called Negro races to do with a great variety of human types and mixtures of blood representing at bottom a human variation which separated from the primitive human stock some ages after the yellow race and before the Mediterranean race, and which has since intermingled with these races in all degrees of admixture so that today no absolute separating line can be drawn.

The real history of the human races is unknown. A probable theory would be that the first great division of men took place at the roof of

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<sup>1</sup> Sergi, p. 249.

<sup>2</sup> Ripley, p. 48.

<sup>3</sup> Denniker, p. 98.

the world, the Asiatic Himalaya mountains; that here the primitive brown stock of men divided—those to southward gradually through ages becoming long-headed and tall, and those to northward broad-headed and shorter. From the southern long-headed variety developed in ages the closely allied Negro and Mediterranean races and from the Mediterranean race and the invading Asiatics came modern Europeans.

## II

### Anthropological View of Race<sup>1</sup>

By Dr. Felix von Luschan

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Coloured people are often described as savage races, but it is comparatively rare to find any attempt to give a proper definition of "coloured" and "savage."

A certain order issued by a European Governor in Africa once stated what Negroes, Arabs, Hindus, Portuguese, Greeks, and other coloured people, had to do on meeting a white man, and in the German Reichstag one of the successors of Bismarck once spoke of the Samoans as a "handful of savages." Again, many books have been written on the differences between races of men, and serious scientists have tried in vain to draw up an exact definition of what really constitutes the difference between savage and civilised races. It is very easy to speak of "Greeks and other coloured people"; but some assign the ancient Greeks to the group of civilised races, and are so severe in their division as to exclude from that group the ancient Romans as half-barbarians.

The division of mankind into active and passive races is an old one. Since then an attempt was made to put "twilight" races between the "day" races and the "night" races, and the Japanese were included in this "Dämmerungs-Menschen"—the Japanese, who are now in the van of human civilisation in Asia, and who have, perhaps, saved the mental freedom of Europe at Tshushima and on the battle-fields of Manchuria.

Still weaker and more objectionable is the division as to colour. We now know that colour of skin and hair is only the effect of environment, and that we are fair only because our ancestors lived for thousands, or

<sup>1</sup> Reprinted from *Papers on Inter-Racial Problems*, edited by G. Spiller. London: P. S. King & Son, and Boston: The World's Peace Foundation, 1911, pp. 18-22.

probably tens of thousands, of years in sunless and foggy countries. Fairness is nothing else but lack of pigment, and our ancestors lost part of their pigment because they did not need it. Just as the *Proteus sanguineus* and certain beetles became blind in caves, where their eyes were useless, so we poor fair people have to wear dark glasses and gloves, when walking on a glacier, and get our skin burned when we expose it unduly to the light of the sun.

It is therefore only natural that certain Indian races and the Singha-  
lese are dark; but it would be absurd to call them "savage" on that account, as they have an ancient civilisation, and had a noble and refined religion at a time when we had a very low standard of life.

Some men say that coloured people are "ugly." They should be reminded that beauty is very relative, and that our own idea of beauty is subject to changes of fashion. We know, too, that artists so refined as the Japanese find our large eyes and our high noses horrid.

It is also said of the primitive races that they are not as cleanly as we are. Those who say this, however, forget the dirt of Eastern Europe, and are ignorant that most primitive men bathe every day, and that the Bantu and many other Africans clean their teeth after every meal for more than half an hour with their *msuaki*, while, on the contrary, millions of Europeans never use a tooth-brush.

So it is with dress. Ethnography teaches us that primitive man can have a highly developed sense of modesty, though naked, and we all know how immodest one can be in silk and velvet.

The same can be said of the lack of written language. It is true that most primitive men are Analphabets, but so are 90 per cent. of the Russians; and we know that memory is generally much stronger with the illiterates than with us. It may well be that the very invention of writing led to a deterioration of our memory.

Most frequently "savages" are accused of being weak in abstract thinking, like children. To show how such opinions originate, I beg to relate a single case lately reported to me by one of my friends. A young colonial officer buys a basket and asks the name of it in the native language. The first native says, "That is of straw"; another native says that they also make them of rushes. One of the two seemed to have lied, so each of them received twenty-five lashes. A third native is called. He says, "This basket is plaited," and gets twenty-five also. The next native affirms that the basket is nearly new, and gets twenty-five. The next, that he does not know whose basket it is, &c. The final result of this scientific investigation is two hundred lashes; and the white man writes in his notebook: "These natives here are brutes, not men." The black man says to his friends, "This fellow belong white is not proper in his save box," and thinks it safer to keep at a good distance from him; and a certain scientist at home gets a splendid illustration of his theory of the poor intellect of savage man and of his weakness in abstract thinking.



I once personally witnessed how a would-be linguist tried to learn Kurdish from a Kurd, with whom he could only just speak by means of a Turkish and French interpreter. He began with one of the famous phrases in Ahn's Grammar, in the style of "my brother's pocketknife is prettier than your mother's prayerbook," and wanted to have it translated into Kurdish. The result was rather poor, and my pseudo-linguist soon gave it up, saying that the Kurds were so stupid that they did not even know their own language. My own private impression was somewhat different, and I took great care afterwards to convince my Kurdish friend that not all Europeans were so silly and impatient as his first interviewer.

In former times it was not so much the mental and material culture of foreign races, as their anatomical qualities, which were taken as the starting-point, in showing their inferiority. Especially in America, before the war, Anthropology (or what they called by that name) was engaged in showing that the Negro, with his black skin, his prognathism, his blubber-lips and his short and broad nose, was no real human being but a domestic animal. How to treat him was the owner's private affair; it was nobody else's business, any more than the treatment of his cattle and horses.

Even to-day there are scientists who claim a separate origin for the various human types, and who link one palæolithic race to the Gorilla and another (or perhaps the same) to the Orang. The author of *Anthropozoon biblicum* goes still further and wants us to believe that the dark races are the descendants of incestuous intercourse between "Aryans" and monkeys. But the great majority of our modern authorities now claim a monogenetic origin for mankind.

So the question of the number of human races has quite lost its *raison d'être*, and has become a subject rather of philosophical speculation than of scientific research. It is of no more importance now to know how many human races there are than to know how many angels can stand on the point of a needle. Our aim now is to find how ancient and primitive races developed from others, and how races have changed or evolved through migration and interbreeding.

We do not yet know where the first man began to develop from earlier stages of zoological existence, and we know nothing of his anatomical qualities. The *Pithecanthropus erectus* from Java was for some time considered to be such a first man or "missing link"; but he proved to be only an enormous Gibbon. The oldest known remains of real man have been found in Western Europe. They do not show one single trait that is not found in one or other modern skull or skeleton of aboriginal Australians; even the mandible of Mauer-Heidelberg, primitive as it is, has a typical human dentition. So we shall probably not be far from the truth if we state that the palæolithic man of Europe was not essentially different from the modern Australian. If we are allowed to draw conclu-

sions as to the soft parts from the qualities of the skeleton, our palæolithic ancestor had dark skin, dark eyes, and dark, more or less, straight hair. His home was probably in some part of Southern Asia; but we find similar types even now among the Toala of Celebes and the Veddas of Ceylon. In fact, millions of dark men in India belong to the same stock, and so do all the dark tribes of Afghanistan and Beluchistan.

So we can trace an early and primitive type of mankind from Gibraltar, Moustier, Spy, Neanderthal, Krapina, &c., to Ceylon, Celebes, and Australia. This certainly is a wide area, but every year is now bringing fresh proofs of this direct continuity of a distinct human type from the earliest palæolithic ages to modern times.

The question naturally arises how it is that our Australian brothers have remained for fifty or a hundred thousand years, or longer, in such a primitive state of mental and material culture, while we Europeans have reached the height of modern civilisation. The answer is not difficult. Australia was isolated from the rest of the world through an early geological catastrophe soon after the immigration of palæolithic man. Every impulse and incentive from without ceased, and human life began to petrify.

It was quite otherwise in Europe and in Western Asia. The thousand advantages of the environment, the broken coastlines, the many islands, the navigable rivers, and especially the constant passing from Asia to Europe and from Europe to Asia and Africa, the ready exchange of inventions and discoveries and acquisitions, the incessant trade and traffic, have made us what we are.

This primitive but uniform human type began to change chiefly in two directions. To the south-west of the line connecting Gibraltar with Australia, man, in some way or other, developed curly and woolly hair, and so became what we now call Protonigritian. We find his descendants in Melanesia and in Africa. The Pygmies form a very old branch of this protonigritic group; and we find them in South Africa (Bushmen), in many parts of Tropical Africa and of South-Eastern Asia, and even in some islands of the Pacific. We do not know where they became small, whether in their original home or later on, after their dispersion. The first theory is certainly the simpler; but the second is not without analogy. We know that the Ammonites began to unroll themselves quite independently of each other in distant oceans, but more or less in the same geological period.

On the other side of this line, in Northern Asia, primitive man acquired, during many thousands of years, straight hair and a shorter or broader skull. The modern Chinese and the typical, now nearly extinct, American Indian are at the end of this north-eastern line of development, while the typical Negro represents the south-western end.

We have thus three chief varieties of mankind—the old Indo-European, the African, and the East-Asiatic, all branching off from the same

primitive stock, diverging from each other for thousands, perhaps hundreds of thousands, of years, but all three forming a *complete unity, intermarrying in all directions without the slightest decrease of fertility.*

From these three varieties came all the different types of modern mankind, generally by local isolation. A very interesting example of such mutation is found in the earliest known inhabitants of Western Asia. This is the land of those extremely narrow and high-arched noses, we generally call Jewish or even Semitic. These remarkable noses, however, do not belong to the Semitic invaders, of whom Abraham is the eponymic hero, but to the pre-Semitic population which might be called Hittite or Armenoid, as the modern Armenians are their direct descendants.

These old Hittites or Armenoids emigrated in very early times to Europe, where the "Alpine Race" descended from them. In the most out-of-the-way valleys of Savoy, Graubünden, Tyrol, and Carinthia more than half of the modern population has the head-form and the nose of this second immigration from Asia to Europe, and from the mingling of this short-headed "Alpine Race" with the descendants of the long-headed Palæolithic or Neanderthal or proto-Australian Race, all the great modern European races have sprung. Only the Turks and the Magyars represent a later immigration from Northern Asia, and of the Magyars in particular we know that they settled in their present home in Hungary only a thousand years ago, and that their grammar is most intimately related to the grammar of the real Turkish languages. Perhaps the Slavonic races also were more or less influenced by later immigrations from Northern Asia.

Thus the European races can only be understood by considering Europe as a small peninsular annex to ancient Asia, and for the understanding of the non-European races it is necessary to remember that the boundaries of water and land and glaciers have altered immensely in the course of the many hundreds of thousands of years of human existence.

While the first varieties of primitive man were certainly formed *and fixed* by long isolation, later variations and races were caused by migration and colonisation, as might perhaps best be shown by sketching the anthropology of Africa and of the Pacific Islands.

Just as Madagascar was peopled about 900 or 1000 A. D. by the Indonesian colonists, coming from Sumatra, so untold ages ago the first inhabitants of Africa came from a place somewhere in Southern Asia on the great line from Gibraltar to Australia. No skulls or skeletons of these earliest Africans are as yet known, but we may hope to find them sooner or later, as we already now know a good many sites of palæolithic implements in various parts of Tropical and Southern Africa.

The anatomical qualities of these first Africans will certainly be found to differ little from those of aboriginal Australians; but in tens or hundreds of thousands of years the palæolithic African developed into a real Negro. He exists in two varieties: a tall variety, like the modern Nigri-

tian from the coast of Upper Guinea, and a small one, like the Bushmen and the Pygmies, now known in so many places in Central Africa. But I have already stated that we are as yet quite ignorant of the real home of these small races.

To these two oldest elements in Africa was added, ages afterwards, but still in prehistoric times, a third one, the Hamitic. It is descended from the same ancient "Gibraltar-Australia-line," but was in a higher stage of civilisation. These Hamites had already a greatly refined language, with an admirable grammar, closely related to that of the Semitic and Indo-germanic languages. In Egypt they created, more than six thousand years ago, the marvelous civilisation which we now admire as the mother of our own. Ancient Hamitic influences can be traced all through Africa; in Abyssinia, in Galla-, Somal-, and in Masailand, we find even now Hamitic languages, or at least Hamitic grammar and Hamitic types.

In Central Africa, in the region of the great lakes, we have the Hima and Tusi, generally as chiefs, reigning over Bantu tribes, often with face and figure like those of the old Pharaohs of Egypt. Even in South Africa nearly 1 per cent. of the actual Bantu population have high and narrow noses, thin lips, and fine, large, and orthognathous skulls of the Hamitic type, and all the Hottentot languages and dialects have a pure Hamitic grammar. Also the pastoral habits of many African tribes, long-horned cattle, their spiral basket-work, &c., are Hamitic, and we can thus trace Hamitic influence from the Nile to the Cape of Good Hope.

In the West of Africa, also, the Hausa and many other Hamitic tribes have been of the greatest importance in the progress of African civilisation and the formation of new tribes.

In later historic times Arabic, Persian, and Indian influences were at work in Eastern Africa. The periodic occurrence of Passat and Monsoon had already led to occasional visits and perhaps even to some colonisation at a very early stage of human history; the zebu, the goat, and a great many domestic plants, were brought from India to the Swahili coast, and from there to the interior of Africa; but we do not know when. We know only that Islam came from Arabia comparatively late—Islam that is now the prominent religion throughout vast regions of Africa, and will probably remain so for many centuries to come.

The Mediterranean coast of Africa also has always been open to foreign influences. The Vandals who came to Africa in 429 A. D. certainly had forerunners even in prehistoric times. The trepanning of skulls which was known in the late palæolithic cave dwellings in France, was performed on the Canary Islands, and is even now found among some tribes in Southern Algeria. The modern pottery of Adamaoua shows a close relation to the pottery of the Hallstatt period and of ancient Sardinia, and some modern armlets and bronze daggers in the Western Sudan look as if they might belong to the European Bronze Age. We do not

know where the art of casting in bronze (the *cire perdue* process of the French, the casting with *cera perduta* of the Italians) had its real origin; probably it came from Egypt or from Babylonia. We are also ignorant of the way it took in coming from there to Europe and to the Western Sudan, but we see from the prehistoric character of many African bronze daggers, armlets, &c., that the art of casting must have come to Adamaua not later than the sixth century B. C.

Six centuries before the historic invasion of the Vandals, Hannibal sent his soldiers from Africa to Europe and from Europe to Africa, and we know that in the early Middle Ages African Mohammedans reigned in Spain for more than five hundred years.

Thus there was a constant coming and going between North Africa and Western Europe, and we cannot be astonished to find so many blue eyes among the Berbers of Morocco, and even among the Ful and other tribes in the Sudan.

In fact, the natives of Africa, who were considered not long ago to be a homogeneous mass, now turn out to be in reality a most complicated mixture of quite different elements, the outcome of immigration at different periods and from different parts of the globe.

Not much less complicated is the anthropological structure of Oceania. Here we have real pygmies, and the Melanesians, who are very similar to the African Negroes with dark curly and often spiral hair, dark skin, long skull, prognathous face, broad nose, and thick lips. They are found nearly pure on the Fiji Islands and in some parts of New Caledonia and in the Solomon Islands and the New Hebrides. In other parts of the Western Pacific they are more or less mixed with the old pygmy races and form what are now generally called the Papuan elements of Oceania. The greatest possible contrast to these Melanesians and Papuans is found in the Polynesian type, which is found in its purest form in Tonga and Samoa, but partly also in the Eastern Group of Polynesia. The real and pure typical Polynesian has a skin not much darker than that of many Sicilians or Spaniards; his hair is dark and straight, the skull is extremely short, but very broad and high; the face is orthognathous, the nose narrow, the lips sometimes very thin, never as thick as those of the Melanesians. Many Polynesians might easily be taken for full-blooded Europeans; others, especially some of the females, resemble types from Indonesia or from Siam and Cambodja, except that they are, as a rule, much taller than any tribes of South-Eastern Asia. On the whole it is evident, without any recourse to linguistics and ethnography, merely by studying their physique that the Polynesians came from Asia and that they came by way of Indonesia. This is also shown by their cosmogonical system and their eschatology.

These two races, the Melanesians and Polynesians, different from each other as they are, have intermarried on many groups of the Pacific Islands for at least many centuries. On some islands, *e. g.*, in New

Zealand, a sort of real mixture of types has taken place, on others the two types have remained quite distinct, so that in accordance with Mendel's law, always a certain proportion of the people belong to the *one*, and another proportion to the *other* type, and only one-half (or less) of the inhabitants have the qualities of both types mixed.

Wherever we try to investigate in this way the natural history of man, we always find inter-connection and migration, often over more than half of our globe. We can trace Turk languages from the Mediterranean all through Asia to the vicinity of Kamtschatka, and Malayan languages are spoken eastwards as far as Rapanui or Easter Island, the ultima Thule of the Pacific; westward we find the Hova of Madagascar, descendants of old Indonesian colonists who probably came from Sumatra about a thousand years ago, still preserving their type, their Indonesian language and their old material culture. Hamitic grammar and Hamitic type can be traced right through Africa.

The religions of Buddha and of Christ have each conquered more than 500 millions of men, and Islam spreads from Arabia as far as the West Coast of Africa, and eastward all through Asia, as far as the Indonesian Archipelago. We find carvings in New Ireland that can be traced back to the famous Greek marble representing the rape of Ganymede, and we know that the religious style of Buddhist art goes back to ancient Greece, just as the Japanese No-masks are the direct descendants of the masks in ancient Greek and Roman plays.

In the same way our own domestic animals and plants, our corn and grains, can be traced round the globe, and in a few centuries American plants have spread so universally in Africa, that to the non-botanist they seem to be indigenous in the Dark Continent.

In former times ethnologists used to admire the apparent unity in the direction of the human mind, and to wonder how it was that in all parts of the earth men had similar ideas and ways. Now this "Völkergedanken" theory is nearly abandoned, and we are forced to admit the real unity of mankind. Fair and dark races, long and short-headed, intelligent and primitive, all come from one stock. Favourable circumstances and surroundings, especially a good environment, a favourable geographical position, trade and traffic, caused one group to advance more quickly than another, while some groups have remained in a very primitive state of development; but all are adapted to their surroundings, according to the law of the survival of the fittest.

One type may be more refined, another type may be coarser; but if both are thoroughbred, or what we call "good types," however they may differ, one is not necessarily inferior to the other. In this sense I could once say in one of my University lectures that the only "savages" in Africa are certain white men with "Tropenkoller." I am afraid I owe perhaps to this paradox the honour of being invited to take part in this Congress, and I feel it therefore my duty to declare most formally that

I am still seriously convinced that certain white men may be on a lower intellectual and moral level than certain coloured Africans. But this is a mere theoretical statement and of little practical value, except for the Colonial Service. In the Colonies, naturally, a white man with a low moral standard will always be a serious danger, not only for the natives, but also for his own nation.

### III

#### On Several

#### Anatomical Characters of the Human Brain

Said to Vary according to Race and Sex, with  
 Especial Reference to the Weight  
 of the Frontal Lobe\*

By Franklin P. Mall

From the Anatomical Laboratory of the Johns Hopkins University

A survey of the literature on the peculiarities of the brain in men of genius, in women and in the lower races indicates that some anatomists have thought they could determine, almost at a glance, whether or not a given specimen came from a great man, a woman or from a Negro. I refer especially to the older works of Huschke and of Parker and to the more recent ones of Spitzka and of Bean.

Huschke<sup>1</sup> cut the frontal lobe from the rest of the brain at the line of the coronal suture, that is he removed that portion of the cerebrum which is covered by the frontal bone and compared it with the rest of the brain. The result showed a *decidedly* greater amount of frontal lobe, fully one per cent (!) in the male than in the female. The fresh brains that were studied by Huschke were simply cut with a knife along the line mentioned above. He further states that the central sulcus is straighter, more perpendicular and nearer the front end in the female brain, the difference in position being about 12½ per cent of the brain length.<sup>2</sup> The latter figures were obtained from wax casts of brains.

Huschke also expresses himself regarding the Negro brain as follows: "Aus allem diesen geht hervor, dass das Negerhirn, sowohl das grosse wie das kleine, ja auch das Rückenmark, den Typus des kindlichen und weiblichen Hirns eines Europäers besitzt und ausserdem sich dem Typus des Hirns der höheren Affen nähert," etc.

\* Reprinted, by permission of the author and the publisher, from *The American Journal of Anatomy*, Vol. IX, No. 1.

<sup>1</sup> Huschke. *Schädel, Hirn und Seele*. Jena, 1854.

<sup>2</sup> The misprint in Huschke, p. 153, has been copied by Eberstaller, p. 41. The number given is 86.1 per cent, it should be 56.1 per cent.

It is admitted by Huschke that it is extremely difficult to recognize a difference in the convolutions due to sex, but, "es ist aber keine Frage, dass sie existiren." He further generalizes, as has often been quoted, that in the male there is more frontal lobe: "Das Weib ist ein *homo parietalis* und *interparietalis*, der Mann ein *homo frontalis*, und das Weib hat deshalb auch ein runderes Gehirn, als der Mann." According to his measurements it was found that in seven women the frontal lobe, *i. e.*, the portion of the brain covered by the frontal bone, contains 23.9 per cent of the brain weight. In fifteen men it contains 24.4 per cent. So it was actually determined by weighing the parts of the brain that the frontal lobe in men is one per cent heavier than in women. This difference he believes corresponds with the differences of the areas of the surface of the brain as well as with that of its volume. It may be noted that the individual frontal lobes given in his tables range from 21.8 per cent to 26.1 per cent, the values being often recorded to the second decimal place (*e. g.*, 24.49 per cent).

Meynert<sup>3</sup> examined 157 brains from insane individuals by separating the mantle from the brain stem which included the basal ganglia and some of the gray substance of the island. He then cut the mantle through the central sulcus with a scissors which gave him the frontal lobe composed of the brain tissue in front of the fissure of Rolando minus the basal ganglia. This portion was then compared with the rest of the brain mantle. He concludes that in men as contrasted with women there is relatively more brain substance in front of the central sulcus than behind it—a conclusion which, it seems to me, is not justified by his own figures. They are as follows. (Note especially the summary in the third table.)

According to Donaldson,<sup>4</sup> Broca divides the cerebrum into three lobes, one of which is the frontal, limited behind by the central sulcus and including below its share of basal ganglia. The average weight of Broca's frontal lobe is 43.5 per cent for men and 43.7 per cent for women, thus contradicting what has been asserted by Huschke and by Meynert. When the brain is distorted, due to artificial deformity of the skull, this

## MALE

Age in Years	Weight of Mantle. Grams	Weight of Frontal Lobe. Grams	Per Cent. of Frontal Lobe	No. of Specimens Examined
1-19	866	380	43.8	4
20-29	1080	428	41.5	15
30-39	1085	428	41.3	21
40-49	1084	426	41.1	26
50-59	969	402	41.3	23
60-69	1120	424	41.5	12
70-79	948	384	40.5	1

<sup>3</sup> Meynert. Das Gesamtgewicht und die Theilgewichte des Gehirns, etc., Vierteljahrsschrift für Psychiatrie, Bd. 1, 1867.

<sup>4</sup> Donaldson, Growth of Brain, London, 1895.



## FEMALE

20-29	922	390	42.3	10
30-39	910	374	40.1	16
40-49	916	380	41.4	17
50-59	919	378	41.1	8
60-69	917	365	40.0	2
70-79	846	358	42.3	1
80-89	894	390	43.6	1

## WEIGHT OF THE FRONTAL LOBE PER 1000

	Male	Female
During development	416	425
During middle age	414	416
During old age	412	410
During all ages	414	415

percentage remains practically unchanged.<sup>5</sup> I have been unable to consult Broca's original papers, but Professor Donaldson has kindly sent me the necessary data which I append in a foot-note.<sup>6</sup>

It would seem as if the above statements settled the question of the relative size of the frontal lobe in men and women, but the following remarks are of historical interest. It is noted above that Huschke believed he had shown the central sulcus to be more perpendicular and not as far back in the female as in the male, thus making the frontal lobe smaller in the former.

Rudinger<sup>7</sup> studied the brains of twin fetuses and believed that he

<sup>5</sup> Ambialet. *La Deformation Artificielle de la Tete*, etc. Toulouse, 1898.

<sup>6</sup> In Broca's collected papers, *Memoires Anthropologiques*, T. V., page 131, under the title, "Sur le poids relatif des deux hemisphere cerebreaux et de leur lobes frontaux," he gives a brief statement to the effect that he weighed (1) the entire encephalon, (2) bulb, (3) cerebellum, (4) pons, and then separated each hemisphere by "deux coupes" into three lobes. In this manner he treated 440 cases.

There is every reason to think that he uses the term "hemisphere" in its technical sense, as he knows the difference between that and the mantle. This would involve the basal ganglia in the lobes as he records them.

Further, in the *Bulletin Societe d'Anthropologie*, T. VI, 1871, page 113, in the article entitled "Sur la deformation toulousaine du crane," he gives numerical statements which lead to the same conclusion. The hardened brain in question weighed

	825 grams
Cerebellum	109 grams
Left hemisphere	339 grams
Right hemisphere	351 grams
Total	799 grams

leaving the difference between that and the weight of the entire encephalon, 26 grams for the pons and medulla. These 26 grams are not too much for the weight of the pons and bulb, and on the other hand are not nearly enough to cover the basal ganglia, see "Growth," etc., page 101. It seems probable therefore that his hemispheres included the basal ganglia.

If we take now his analysis of the right hemisphere, weight 351 grams, he gives the frontal lobe 159 grams, occipital lobe 45 grams, and parieto-temporal lobe 147 grams, total 351 grams. Thus his three lobes equal the weight of his hemisphere, and his hemisphere contains the basal ganglia, and I believe that it is by reasoning similar to this that I arrived at the conclusion expressed on page 181 of my book, to which you refer.

<sup>7</sup> Rudinger. *Verhandl. d. Anatom. Gesell.*, 1894.

demonstrated that the development in the male is more advanced than in the female and that the frontal lobe is larger in the male. Recently his question has been thoroughly tested by Waldeyer<sup>8</sup> who found that the development of the brain of the male is more advanced in the majority of specimens of twin foetuses of opposite sexes, but that in individual specimens this was not always the case, "so dass wir noch keinesweges in der Lage sind, von einem 'gesetzmässigen Verhalten' wie es Rüdinger tut, sprechen zu können." My own experience confirms Waldeyer's, for while the male of twin pregnancies is often markedly larger than the female it is by no means always so. Of course, this does not mean that the frontal lobe is relatively larger in the male.

More extensive measurements were made by Passet<sup>9</sup> who studied with great care the brains of 17 adult males and 12 females. He found the position of the central sulcus much the same in both sexes, if anything a little further back in the male than in the female. He shows by a diagram (Fig. 6) that there is a great deal of variation of the position of this sulcus in different brains, its angle with the sagittal plane ranging from 46° to 79°. The average is 62° for the male and 64° for the female. He states that the central fissure is shorter and straighter in the female and lies farther forward. Although his work was done with the greatest of care his methods are too crude, the number of specimens studied too small, and the degree of variation so great, that nothing is proved regarding the relative size of the frontal lobe in the two sexes.

Eberstaller<sup>10</sup> in the discussion of the above question in his excellent monograph on the frontal lobe concludes that there are no differences due to sex in the angle that the central sulcus of the brain makes with its sagittal median plane. His measurements included 300 hemispheres and he found that the above mentioned angle varies constantly between 70° and 75°. He further found that the central sulcus when extended intersected the sagittal border of the mantle at 65.4 per cent of the distance from the olfactory trigonum to the occipital pole in men and at 66 per cent in women. If this means anything it indicates that the frontal lobe in the brain of women is relatively larger than it is in men. The objections to the conclusions of Huschke and Passet regarding the percentages of brain in front and behind the central sulcus are fully discussed by Eberstaller, who points out the weaknesses of their observations as well as the objections to their conclusions.

Cunningham<sup>11</sup> confirms fully the conclusions of Eberstaller in the examination of 86 brains of various ages. "At no period in its growth does the fissure of Rolando exhibit in its position what we might safely

<sup>8</sup> Waldeyer. Sitzungsber. d. K. P. Akad., 1907.

<sup>9</sup> Passet. Arch. f. Anthropologie. XIV, 1883.

<sup>10</sup> Eberstaller. Das Stirnhirn. Wien, 1890.

<sup>11</sup> Cunningham. Jour. Anat. and Physiol., Vol. 25, 1891.

regard to be sexual differences." Mingazzini<sup>12</sup> seems to be of different opinion. Regarding his statement, Waldeyer sounds a warning as follows: "Des weiteren möchte ich herzu noch bemerken, dass es mir sehr misslich erscheint, Schlüsse aus Untersuchungen zu ziehen, die auf wenige beobachtete Fälle sich erstrecken." He further remarks that his own experience agrees with the results of Eberstaller and of Cunningham.

It seems to me that it is quite apparent that with the methods used by the above named investigators it cannot be definitely concluded that there is a marked difference between men and women in the relative amount of brain in front of the central sulcus. The variations in various brains are so great that an approximately correct percentage can only be obtained from a very large number of specimens and those have been supplied only by Eberstaller and by Cunningham. Furthermore, the personal equation of the investigator plays a very important rôle in studying a question of this kind, and even if Eberstaller and Cunningham have proved that there is no difference in the position of the central sulcus due to sex, they have not proved that the weight of the frontal lobe does not show such a difference. In fact the methods employed to determine the relative weight of the frontal lobe are so crude that unless the differences found are constant and marked we must challenge the statements of those who assert that differences due to sex exist. I would like to ask them to separate a collection of 100 brains (50 of men and 50 of women) each of the same weight and see how well they can do it. Until their "guesses" prove to be correct in over 50 per cent of the specimens examined we must conclude that the "differences," like those of Huschke, are largely due to the personal equation of the investigator.

While these various attempts, which we consider unsuccessful, have been made to show that there is an unlike distribution of the brain substance in women and in men, attempts have been made to show that in the brains of Negroes as well as in those of men of genius similar distinctions can be found. In general the differences in weight between each of these three classes of brains is fully 100 grams, and if it were shown that the proportion of their parts is different in each class it would be a discovery of great importance. The smaller frontal lobe in women and in Negroes, and the larger in men of genius would prove, it is believed, that this portion of the brain is the chief seat of a good mind. It appears, however, that no such unequal distribution of brain substance exists.

A few years ago the startling announcement was made by Spitzka<sup>13</sup> that the area of the cross section of the corpus callosum was larger in eminent than in ordinary men, that of Leidy being 10.6 sq. cm. Since

<sup>12</sup> Mingazzini. *Lezione di Anat. clinica dei centri nervosi*. Torino, 1905.

<sup>13</sup> Spitzka. *Connecticut Magazine*, 1905, and *Proc. Amer. Assoc. Anat.*, *Amer. Jour. Anat.*, 1906.

the corpus callosum is associated mainly with the frontal lobe the observation, if correct, would be of great significance. The question was immediately tested<sup>14</sup> by comparing in over 150 white and Negro brains the area of the cross section of the corpus callosum with the brain weight and it was found that these characters varied with each other (see Bean, Chart V)<sup>15</sup>. Since the average weight of the brain of eminent men is about 100 grams heavier than the average brain weight of ordinary men, and since the average Negro's brain is 100 grams lighter, the error of Spitzka is easily explained, for in making his comparison he did not take brain weight into consideration. According to Spitzka the brains of "notable men possessing large capacity for doing and thinking much more than their fellows," "compared with ordinary men, individually and collectively, have larger callosa. The callosum of Joseph Leidy exceeds in cross-section that of any other in this series or recorded in literature. Here again, then, we have an index in somatic terms of how we may distinguish the brain of the genius or talented man from that of persons of only ordinary abilities" (p. 303). What he says regarding the callosum of Leidy is true, but regarding the rest he is in error. All the rest of the callosa of notable men given by Spitzka are not above the average for brains of the same weight, and the callosa given in his group of ordinary men (which are from electrocuted criminals) are very much below the average (compare Spitzka's Tables A and B with Bean's Chart V and with the data given in my table). In fact many Negroes of lighter brain weight have larger callosa than most of Spitzka's eminent men. Cope's callosum as measured by Spitzka is far below the average of brains weighing over 1500 grams. Comparing Spitzka's records with Bean's and mine it would be more correct to state that criminals have callosa much smaller than the average.

Furthermore, Bean believed that he had shown that the genu is relatively larger and the splenium is relatively smaller in the Negro, an assertion which is even more striking than Spitzka's. From this as well as from other data Bean deduced that the frontal lobe is smaller in Negro brains than in white. This is in apparent contradiction to the results he obtained by comparing the position of the central sulcus, which in 126 hemispheres holds about the same position in the two classes of brains. If anything, it lies more posterior in the female Negro (Table IVa, p. 381) which would indicate that her frontal lobe is relatively the largest of all.

All of Bean's measurements are made from a brain axis which passes in the sagittal plane between the two hemispheres immediately above the

<sup>14</sup> Bean. *Amer. Jour. Anat.*, Vol. 5, 1906.

<sup>15</sup> Spitzka has not mentioned Bean's observation in his last monograph in the *Trans. of the Amer. Philosoph. Soc.*, XXI, 1907. Bean compares area of the corpus callosum with the volume of the brain, which is statistically objectionable, but the point made is strong enough to question seriously Spitzka's statement.

anterior commissure and just below the splenium. As a rule this line (the axis) passes parallel with the longest axis of the corpus callosum and just below it. From this line he erected two perpendiculars, one just in front of the genu and one just behind the splenium. The distance between the two perpendiculars was then divided into ten parts, the first three, including the genu, he calls the genu, the second three the body, the next two the isthmus and the last two, including the large rounded splenium, the splenium. He then compared the area of the genu with that of the splenium, using the former as ordinates and the latter as abscissæ in the construction of his Chart VII. It was found by this treatment that the Negro brains separated almost completely from the white brains, in Bean's Chart VII, and this line of separation I have inserted at the proper place in my chart, Fig. 1.

I have tabulated as Bean did the area of the genu with that of the splenium in 106 brains and do not find that the symbols for the brains of the two races separate. Most of the Negro brains in my chart are intermixed with the white brains above the line which separates them in Bean's chart. My measurements were all made by tracing the outline of the corpus callosum with the very accurate projecting apparatus made by Hermann of Zurich, while Bean's were made with a less precise instrument borrowed from the Smithsonian Institution. The areas of both Bean's and my own were made with a Conradi planimeter whose minimum registration is 10 sq. mm. and its probable error was found to be 10 sq. mm. In order to exclude my own personal equation, which is an item of considerable importance in a study like this, all of the tracings as well as the measurements of all of the areas were made without my knowing the race or sex of any of the individuals from which the brains were taken. The brains were identified from the laboratory records just before the results were tabulated.

Tabulation of the brain weight with the area of the cross section of the corpus callosum confirms what Bean found, that is, the area increases with the brain weight. The same is true when the area of the corpus callosum minus that of the splenium is tabulated with the weight of the frontal lobe. However, there are great individual variations, but they seem to be of like extent in both the white and the Negro brains. The female records separate somewhat from the male, but this is due no doubt to the lighter weight of the former.

My figures do not confirm Bean's result that the genu is relatively larger and the splenium relatively smaller in the white than in the Negro brain. The specimens I examined include 18 brains which Bean studied, and I find that the measurements I made of the areas of the genu and splenium in them do not agree altogether with his. Ten of the specimens are white and eight Negro brains. In making the comparison a deviation of 10 sq. mm. is overlooked, for this error is to be expected from the planimeter we employed. The genu is larger in Bean's tables than in

mine in 7 white brains and one black brain and smaller in 4 black and 2 white. The splenium is larger in 7 black and 4 white and is not smaller than mine in a single instance in Bean's tables. This discrepancy between our figures is sufficient to account for the racial differences in the corpus callosum found in Bean's tables but not in mine, although the individual deviations in both our charts are very great. I think my chart (Fig. 1) shows conclusively, as far as possible with the method I employed, that there is no variation in either genu or splenium of the corpus callosum due to either race or sex.

In order to determine the relative weight of the frontal lobe in white and in Negro brains I made numerous tests in separating this lobe from the rest of the cerebrum to develop first an accurate method. It was found that it is quite easy to break the cerebrum after it has been hardened in formalin through the central sulcus along the motor tract down through the basal ganglia with considerable precision. The real test of the accuracy was made by comparing the results obtained on the right side with those on the left. If the half brains are of equal weight the frontal lobes should be also of equal weight if the method is a reliable one. It was found in over two-thirds of the brains that the two frontal lobes weighed practically alike, i. e., within 5 grams of each other, a variation which could be accounted for by a slight difference in the amount of drainage and evaporation of water from the specimens. In the remaining one-third of the brains the difference between the two sides averaged 10 grams, which in rough equals the weight of half of the pre-central gyrus. Expressed differently the probable observational error in the weight of the frontal lobe compared with the whole hemisphere is less than one per cent of its weight, so a deviation in the weight of the frontal lobe due to race or sex would have to be fully two per cent in order to be detected.

Another source of error might be due to the fact that only hardened brains were broken, or could be broken, with precision through the central sulcus. It is well known that formalin causes the brain to swell, and it has been shown by Hrdlicka<sup>16</sup> that there is an unequal expansion of the brain, due to both its age and its size. So it is possible for the frontal lobe at first to expand more rapidly than the rest of the brain, and later to shrink more quickly. This, of course, would affect the percentage of the frontal lobe and is a source of error to be reckoned with. The presence of a second preservative like common salt, alum or carbolic acid, which was used in a number of my specimens, is also to be taken into account, for they influence very much the change of volume of the brain.

In order to test this question I weighed the pieces of 5 brains a number of times during a period of nearly a year and found that there was much fluctuation in the brain weight, but the percentage value of the frontal lobe remained very constant, usually within one-half of 1 per cent.

<sup>16</sup> Hrdlicka. Brains and Brain Preservatives. U. S. Nat. Mus., XXX, Washington, 1906.

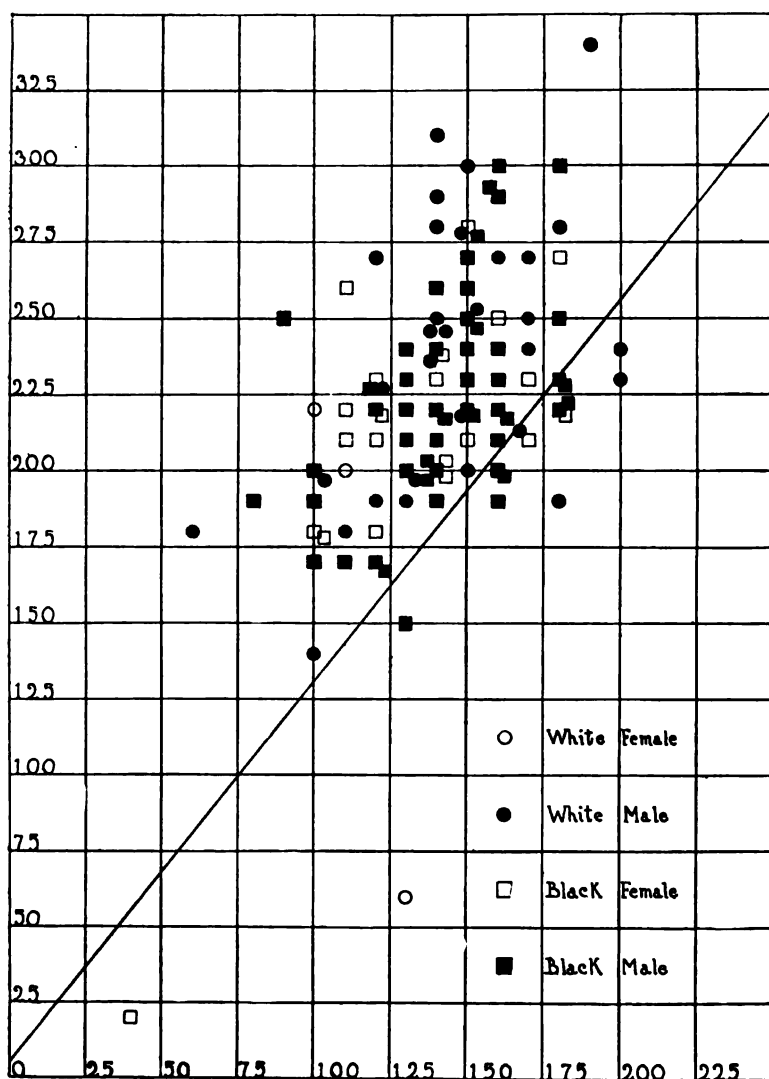


FIG. 1. Showing the relation of the area of the cross section of the genu (ordinates) to that of the splenium (abscissae). The figures represent square millimeters. The diagonal line is in the position which separated the whites from the Negroes in Bean's Chart VII.

The figures are as follows. The first weighing was made as soon as the brain was fairly hardened at the end of about a week, so the weights of the parts when fresh were not obtained. Those marked with a star (\*) are the weights recorded in the Table and in the Figures:

No.	1907				1908	
	March 19	May 1	June 4	Nov. 8	Jan. 25	
2861	1110 44	1190 44	1120* 44—	1085 44—	1040 43.5	gm. of cerebrum. % value of frontal lobe.
2864	1250 44+	1215* 44—	1190 44	1150 44—	1150 44	gm. %
2865	1300 44.5	1325 45	1400* 45	1210 44.5	1235 44.5	gm. %
2867	830 42	870 43.5	875* 43—	765 43	780 43	gm. %
2878	1170 43—	1240 43.5	1205* 43.	1080 43.5	1090 43.	gm. %

No special care was taken to keep the strength of the formalin constant, in fact it was often changed, and this accounts for the fluctuations in the weight of the whole brain. In all cases the parts of each brain were kept together in a single jar in order to subject them to the same strength of formalin from weighing to weighing.

I also weighed the parts of a number of well hardened brains a second time after they had been in formalin for another year. In these the fluctuations of the weight are less marked and the deviation of the percentage value of the frontal lobe is, if anything, less than in the first set. The data are as follows. The figures given in the first column are the ones entered in the charts.

As said above, my personal equation was excluded entirely because all of the breaks and weighings were made without my knowing the race or sex of the individual from which the specimen came.

No.	Jan., 1907	Jan., 1908	
1521	1095 44.5	1045 45	weight of cerebrum. % value of frontal lobe.
1697	780 45—	775 45+	weight %
1720	1080 43+	1025 43.5	weight %
1836	960 45—	895 45—	weight %
1840	1140 44.5+	1130 44.5—	weight %
2621	1015 45—	1025 45—	weight %
2660	960 42	1020 43	weight %
2665	890 41—	825 41+	weight %
2667	895 44	885 43.5	weight %
4x	980 41	960 42	weight %



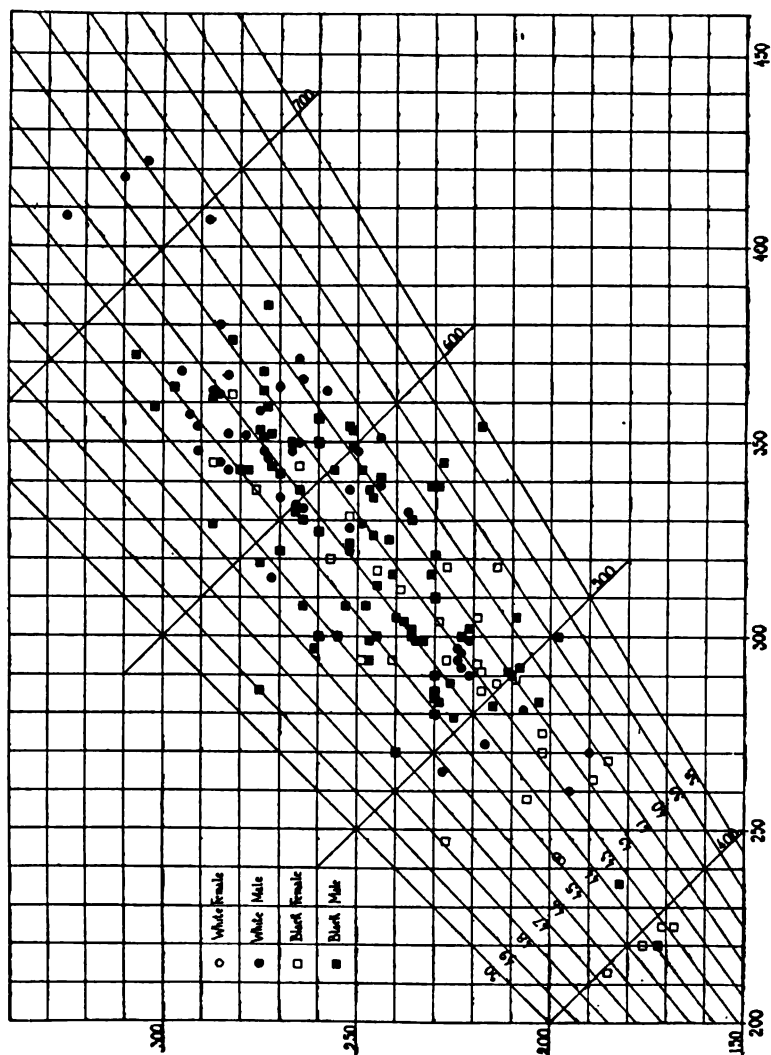


FIG. 2. Showing the relation of the brain substance lying in front (ordinates) of the sulcus centralis to that lying behind it (abscissae). Each symbol represents a half brain.

The figures are in grams. The long diagonal lines, 33-50, indicate the percentage of the precentral brain weight. The lines marked 400-700 indicate the weights of the hemisphere. The weights given are reduced to those of the fresh brain.

In general I used Broca's method to divide the frontal lobe from the rest of the cerebrum and found as he did that the mean weight of the frontal lobe in both men and women is between 43 and 44 per cent. The same is true for both the Negro and the white. This bears out what I have found by measuring the area of the genu and splenium and leads to the conclusion that it is incorrect to state that the frontal lobe of the Negro brain is relatively lighter than that of the white.

All of my figures are given in the table at the end of this article and their bearing upon the percentage of the frontal lobe is given in the two charts. In the first chart, Fig. 2, the weight of each hemisphere is treated by itself and the weights are all reduced to their weight in the fresh state. Of course, only those brains in which the weight when fresh is known could be included in this chart. In making the chart the weights of the frontal lobe are given in ordinates and those of the rest of the hemisphere in abscissæ. Thus each symbol gives an individual half brain. The diagonal lines give the percentage of the frontal lobes and the diagonal lines at right angles to them the weight of the hemi-cerebra. The symbols in the first block and to the left represent hemi-cerebra, between 400 and 500 grams, the next block between 500 and 600 grams, etc.

It is noticed that the weights of the hemi-cerebra range from less than 400 to over 700 grams and that the percentage of the frontal lobes fluctuates from 38 per cent to 49 per cent. The mean is about 43.5 per cent. If in each block the black and the white, and the male and the female are compared it is seen that the distribution is quite even and that on an average the percentage of the frontal lobe is the same in both races and sexes.

In order to give the question another and possibly a better test, I tabulated all the brains in which both halves were weighed, but did not reduce the figures to those of the fresh weight, for in a number of specimens this is not given. Then the combined weight of both sides was divided by two, thus giving the average weight of the frontal lobe of each brain and that of each hemicerebrum behind the central sulcus. In this chart, Fig. 3, each symbol represents a whole cerebrum divided by two, and in it more of the symbols are shifted to the left, for in general there is more shrinkage of the brains due to the long action of formalin and carbolic acid. The individual deviations are not as great as they are in Fig. 2 (39 per cent to 48 per cent) but the mean is about the same (43.5 per cent). Again there is no separation of the brains due to race or sex.

I must therefore conclude that with the methods at our disposal it is impossible to detect a relative difference in the weight or size of the frontal lobe due to either race or sex, and that probably none exists. My weighings of the frontal lobe were made in three series and each time I did not know the race or sex of the individual whose brain was being tested until it had been broken and weighed. There were 6 white and 6 Negro brains in the first series and the racial difference found in it was

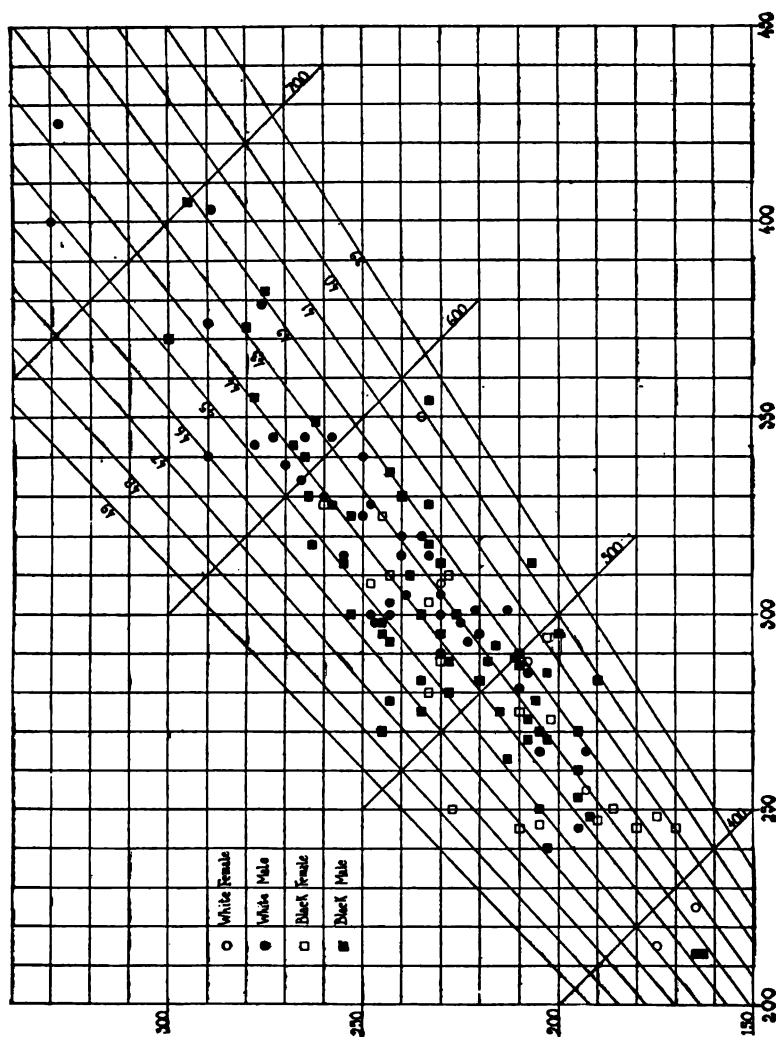


FIG. 3. The same as Fig. 2 with the exception that each symbol represents the average of the two sides of the brain. Each, therefore, represents a whole brain. The weights given are those of hardened brains.

very marked,—41 per cent of frontal lobe in Negro brains and 44 per cent in white brains. In the next series of the brains, the white and the Negro brains came closer together and in the third series of about 10 brains this difference was lost altogether. It is evident, as Schwalbe and Pfitzner<sup>17</sup> have pointed out, that a percentage to be of any significance must not change as the records increase in number.

As it is generally believed that the brains of men of genius are of complex configuration, so it is also believed that the brains of lowly races are of a simple and embryonic type. Thus Parker<sup>18</sup> says that the Sylvian fissure in the Negro is  $\frac{1}{8}$  inches (16 mm.) shorter than in the white and the central sulcus is simpler, straighter and less undulated. He also found a Negro brain in which there was a complete connection between the fissures of Sylvius and Rolando. He states that the occipital fissures are ape-like with a well marked perpendicular fissure. The Negro brain as it presents itself in this country, he says, bears an unmistakably nearer relation to the ape type than does the white, being also more foetal in character.

To anyone who is familiar with the Negro brain the statements of Parker appear to be careless and superficial. His observations upon the length and form of the fissures of Sylvius and Rolando can not be taken seriously in the light of recent studies of these fissures, and they strike one rather as an opinion supported by a strong personal prejudice, as are so many of the observations upon the gyri of sulci. Furthermore, other students of the Negro brain found no such difference and state that they are practically like the white (see Tiedemann, Luschke and Marshall.) Schwalbe,<sup>19</sup> who reviews the work of Parker, states expressly that racial differences in the Negro brain are in all probability due to similar racial peculiarities of the skull. The same statement is also made by Hrdlicka and has been fully tested by Bean. However, such differences are but slight, for a variation in the shape of the skull influences only the main outlines of the brain and not its gyri. The flattening over the anterior association area, as first observed by Hrdlicka, was fully confirmed by Bean and can be seen in most full-blood Negro brains, certainly in more than one-half. One precaution must always be taken in these cases and that is to compare whites and Negroes of the same type of form of the skull. The majority of Negroes are dolichocephalic and these should be compared only with dolichocephalic whites.

In order to make a preliminary test of this question I attempted to assort a collection of Negro and white brains, calling those with the peculiar narrowing and flattening of the upper surface of the frontal lobe, Negro, and those in which it was more convex, white brains. The brains tested were a mixed lot which happened to be on one shelf in the brain

<sup>17</sup>Schwalbe and Pfitzner. *Morph. Arbeiten*, Vol. 3.

<sup>18</sup>Parker, A. J. *Cerebral convolutions of the Negro*. *Proc. Acad. Nat. Sci., Phila.*, 1878.

<sup>19</sup>Schwalbe. *Neurologie*, 1881, p. 575.

room. After they had been assorted according to the character above mentioned I found that there were 60 Negro and 30 white brains and that their assortment was correct in exactly 75 per cent of the cases. Had all of the brains been dolichocephalic I think the test would have fallen out better, and Dr. Hrdlicka informs me that this is also his opinion.

I then mixed the brains again, added to their number, and assorted them a second time according to the richness of the gyri and sulci, using as a standard the two illustrations given on Plate 54 in Retzius' *Menschenhirn*. In case the configuration was complex, of the Gauss type, it was called stenogyrencephalic, and in case it was simple, of foetal type, it was called eurygyrencephalic. Doubtful specimens, and there were many of them, were at first set aside and in case it was impossible to render a decision regarding them by a second effort they were excluded altogether.

The results of this test, based upon brains of unknown origin at the time it was made, are given below.

The percentage of eurygyrencephaly and stenogyrencephaly is therefore about the same in both races.

In order to make a further comparison the brains pictured in Retzius' *Menschenhirn* were arranged into two classes to correspond with his types given on Plate 54. This is, of course, more difficult to do and a large number of doubtful ones were necessarily excluded. The classification of

NEGRO			
MALE		FEMALE	
Eurygyrencephaly	Stenogyrencephaly	Eurygyrencephaly	Stenogyrencephaly
32 brains 68%	15 brains 32%	12 brains 64%	7 brains 36%
WHITE			
19 brains 66%	10 brains 34%	1 brain 50%	1 brain 50%

the pictures into two groups was made independently by Dr. Mellus, Dr. Sabin and myself, none of us knowing at the time whether the illustrations in question were of the brains of men or of women. Our results are given in the following table:

	MALE		FEMALE	
	Eurygyrencephaly	Stenogyrencephaly	Eurygyrencephaly	Stenogyrencephaly
Dr. Mall . . . . .	29 brains (53%)	26 brains (47%)	12 brains (60%)	8 brains (40%)
Dr. Sabin . . . . .	29 brains (58%)	23 brains (42%)	10 brains (62%)	6 brains (38%)
Dr. Mellus . . . . .	23 brains (64%)	14 brains (36%)	7 brains (54%)	6 brains (46%)

Although our results vary considerably they are substantially similar. In general stenogyrencephaly is a little more common in the Swedish brains pictured by Retzius than in the 97 Negro and white brains of Baltimore used in constructing the first table. Unless one attempts to separate brains into complex and foetal types he does not realize the difficulties in doing it and I think the deviation in a second attempt might be fully  $\pm 10$  per cent of the first determination. If the personal equation were added the deviation might be much greater.

The above tables are given to show how unreliable the statements regarding the complexity of the gyri and sulci may be, and that with the present crude methods the statement that the Negro brain approaches the foetal or the simian brain more than does the white is entirely unwarranted.

In this connection the recent statement of Elliott Smith regarding racial peculiarities in the brain should also be considered. It relates to the so-called Affenspalte. Smith<sup>20</sup> says: "It often happens (especially in the brains of lowly human races, such as Negroes and aboriginal Australians, and in the anthropoid apes) that the sulcus occipitalis anterior, together with the sulcus occipitalis inferior form a large arc (parallel to the sulcus lunatus) forming the anterior limit of a great tongue of cortex, the tip of which often reaches the upper end of the sulcus temporalis superior in those cases in which there is no temporo-parietalis. The presence of this great arcuate sulcus explains much of the misleading literature relating to the search for an 'Affenspalte' in the human brain."

The "Affenspalte" first described by Rüdinger has caused anatomists much trouble and its presence in all human brains was often questioned. A few years ago Elliott Smith<sup>21</sup> demonstrated that a marked occipital operculum which is identical with that of the gorilla's brain is often present in the brain of the Egyptian fellah. However, the operculum is not always well marked, but its bounding sulcus, which Smith calls the sulcus lunatus, can be seen in every human brain. Smith's studies are directed rather towards the homology of the Affenspalte which he has fully demonstrated with the aid of the structure of the cortex, *i. e.*, the extent of the stripe of Gennari.<sup>22</sup> At first he showed that the Affenspalte (sulcus lunatus) is present in all Egyptians brains<sup>23</sup> and later he found it present in Negro, Syrian, Turkish and Greek brains and with a study of literature he concluded that it is a normal feature of the adult human brain. It would have been easy for Smith to draw a wrong conclusion regarding this sulcus, for he began his study of it with the Egyptian brain; however, he did not end there.

It may also be noted that Parker states that he found a Negro brain with a gyrus cuneus on the surface as is the case in the simian brain. Since Parker gives no illustrations it is difficult to ascertain whether or

<sup>20</sup> E. Smith. *Jour. Anat. and Phys.*, Vol. 41, 1907.

<sup>22</sup> Smith. *Anat. Anz.*, XXIV., p. 437.

<sup>21</sup> Smith. *Anat. Anz.*, 24, 1904, p. 74.

<sup>23</sup> Smith. *Anat. Anz.*, XXIV., p. 216.

not he saw only an annectent gyrus partly on the surface, as described and pictured in Quain's Anatomy.<sup>24</sup> This latter condition I have also observed in both Negro and white brains. Until it is thoroughly investigated in a large number of specimens its meaning still remains an open question. Probably it will fall, as do other anatomical peculiarities of the Negro when they are fully investigated.

I wish to add a remark regarding the anatomy of the Negro. One is often led to believe<sup>25</sup> that there are more anatomical anomalies in the Negro than in the European body. I have now had considerable experience in the dissection of the Negro and have yet to observe that variations are more common in the Negro than in the white. In fact it seems as if excessive development of facial muscles and other variations is more common in the white, but until a large number of statistics are collected no definite statement can be made. However, we have made many thousands of records of nerve variations and find in them no racial peculiarities.<sup>26</sup> The misleading statements are based upon a few dissections of Negroes in which the variations found are given as peculiarities of the race. An equal number of variations will be found in any corresponding series of white cadavers.

The hope has often been expressed that through the study of the brains of men of genius anatomical conditions would be found which may account for their eminence. In fact one of the first studies included the brain of Gauss<sup>27</sup> and showed that this particular brain was unusually rich in gyri and sulci. Since then the brain of Gauss has often been used as a type representing the highest development. But Wagner says that higher intelligence may exist in individuals with brains either rich or poor in gyri, but the normal brain must be of a certain weight, a certain richness of gyri and sulci as well as certain thickness of cortex. Since Wagner's time quite a large number of brains of distinguished persons have been studied and in general the conclusion has gradually been reached that with the methods at our disposal we are unable to detect in their anatomy conditions to account for great mental ability. The recent studies of Retzius<sup>28</sup> all point in this direction, for he was unable to detect anything remarkable in the brains of distinguished individuals, and no one is more competent than this investigator to deal with this subject.

Within a year the report on the brains of Mommsen, Bunsen and Menzel has been published by Hansemann<sup>29</sup> who has also given an account

<sup>24</sup> Quain's Anatomy, Tenth Edition, Vol. 3, p. 144 and Fig. 102.

<sup>25</sup> For example, Duckworth. Morphology and Anthropology, 1904.

<sup>26</sup> In tabulating these nerves Bardeen and Elting (Anat. Anz., XIX, 1901, p. 132) say that race seems to play no very marked part as a cause in the number or kind of variations (see also Anat. Anz., XIX, p. 217.) In his later and more extensive publication Bardeen does not consider race in the tabulation of nerve variations, presumably because it did not seem to influence them (Amer. Jour. Anat., VI, 1907.)

<sup>27</sup> Wagner. Vorstudien zu einer Wissenschaft. Morphol. d. Menschl. Gehirns, etc., 1862.

<sup>28</sup> Retzius. Biol. Unt., VIII, 1898, IX, 1900.

<sup>29</sup> Hansemann. Ueber die Gehirne von Mommsen, Bunsen und Menzen, Stuttgart, 1907.

of the anatomical findings in the brain of Helmholtz. Hansemann also concludes his study with a healthy scepticism, for he says that within physiological limitations we cannot tell the brain of a distinguished person from that of an ordinary one. He then falls back on the analogy that muscular men are not necessarily athletic, but under proper conditions could easily become so. Furthermore, he predicts that individuals with unusual qualities in one direction, but who are otherwise quite inferior, like mathematical prodigies or remarkable chess players, may possess brains with portions unusually well developed. The recent study by Stieda<sup>30</sup> of the brain of a man who spoke fifty languages gave a negative result, for nothing peculiar was found in it. However, Hansemann states that we should expect to find a morphological basis to account for geniuses of the first rank, for they possess qualities peculiar to themselves. In fact the configurations of the brains of Helmholtz and Menzel showed some peculiarities which may support this theory.

The one ray of hope in the study of the peculiarities of the configuration of the gyri and sulci comes from the comparison of brains of members of the same family which often show many similarities. This important discovery was made by Spitzka,<sup>31</sup> who observed that there were hereditary resemblances in the brains of three brothers. This was fully confirmed by Karplus<sup>32</sup> in studying the brains of 21 groups of relations in each of which he found a marked similarity of the gyri and sulci. The configuration of the right side has a tendency to repeat itself on the right side, and the left on the left, but peculiarities on the right side are not found on the left in near relatives. There is an hereditary tendency in the fissuration of the brain as there is in the other features.

Nevertheless, even if we should find that the brains of two eminent men of the same family were much alike we have by no means shown that the genius has an anatomical basis. Furthermore, it seems to have been established that anatomical variations often show different percentage in different communities. Schwalbe and Pfitzer<sup>33</sup> have shown, for instance, that the absence of the *psoas minor* is as follows:

	MEN			WOMEN		
	No. of Cases	No. of times absent	Per Cent	No. of Cases	No. of times absent	Per Cent
St. Petersburg . . .	900	405	45.	600	326	54.3
Strassburg . . . .	886	219	56.7	175	99	56.6
Boston . . . . .	400	228	55.8	208	145	69.7
England . . . . .	210	125	59.5	180	98	71.5

<sup>30</sup> Stieda. *Zeit. f. Morph. u. Anthropol.*, XI, 1907.

<sup>31</sup> Spitzka. *American Anthropologists*, VI, 1904.

<sup>32</sup> Karplus. *Obersteiner's Arbeiten aus d. Neurol. Inst.*, XII. Wien, 1906.

<sup>33</sup> Schwalbe and Pfitzer, *Morph. Arbeiten*, Bd. 3.



In each group the percentage had reached a constant value, that is with an increase of the number of cases the percentage in a given locality did not change. The same condition may exist in brain configuration, and Merkel<sup>34</sup> states that the brains from cadavers used for dissection in Göttingen, and which come from Brunswick, of which Gauss was a native, were often very rich in gyri and sulci. On the other hand, in Mecklenburg, where Merkel also had had a large experience, brains of the Gauss type were never seen in the dissecting room, but instead a very simple type prevailed.

It certainly would be important if it could be shown that the complexity of the gyri and sulci of the brain varied with the intelligence of the individual, that of genius being the most complex, but the facts do not bear this out, and such statements are only misleading. I may be permitted to add that brains rich in gyri and sulci, of the Gauss type, are by no means rare in the American Negro.<sup>35</sup>

While there seems to be no evidence to show that the configuration of the brains of genius is different from that of other brains, there is some evidence in favor of the statement that there are slight differences due to sex. It is often said that the brains of women are of a simple type, but if their weight is not considered it is questionable whether a collection of brains could be assorted according to sex with any degree of certainty. Furthermore, even the more pronounced differences of eurgyrencephaly and stenogyrencephaly are not easily recognizable because they are not easily measured. Of course, when gyri of the simple type are twice as broad as those of the complex type, as pictured on Plate 54 in Retzius' *Menschenhirn*, it is not difficult, but there are many intermediate stages and the observer can only express an opinion, for there is nothing that can be weighed or measured. Waldeyer states that to determine whether a brain came from a man or woman is much like identifying the sex of the individual from which a given skull came. I am not so optimistic and would rather take my chances with the skull.

In the article by Schwalbe and Pfitzer mentioned above many anatomical variations are tabulated and there do not seem to be more variations in the male than in the female, but the percentage of variations is by no means always alike in the two sexes. If there is a percentage difference according to sex in a special variation it tends to remain constant in various sets of statistics and does not become the same as the records are increased in number. Moreover, "bei den weiblichen Fällen werden in der Regel die Werthe viel rascher constant als bei den

<sup>34</sup>Merkel. *Top. Anat.*, I, Braunschweig, 1885-1890.

<sup>35</sup>Spitzka. *Amer. Phil. Soc.*, Vol. 21, has arranged a number of figures in plates showing the evolution of the complexity of the gyri. For example, in his Fig. 8 the gorilla with a simple brain is below, the brain of a Bushwoman is in the middle and that of Gauss, the most complex, is above. In another plate, Fig. 10, the brain of Gambetta holds the lower position, Altmann the middle and Skobelev the upper. Comparing Figs. 8 and 10 it appears that Gambetta's brain resembles the gorilla's more than it does that of Gauss.

männlichen." In other words, a smaller number of records are required in the female than in the male to obtain the true percentage of variations. How much this indicates is by no means clear, but this conclusion should be that there is not a simpler type, but less variations in the female, which appears to be the opinion of Retzius regarding the female brain.

We have tested this difference by grouping the illustrations of brains in the great *Atlas* of Retzius under simple and more complex types, without knowing whether the picture of a brain in question was from a man or from a woman and obtained the result given on page 46. In the first line in the table my estimates are found with the percentages below them. In the second line another estimation by Dr. Sabin is given, and in the third line one by Dr. Mellus. In general the opinion expressed in these estimations does not bear out the notion that the configuration of the brains of women is of a simpler type than in those of men.

This, however, is only our opinion regarding the complexity of the gyri and sulci of pictures of brains. But Retzius has tabulated in an excellent way a number of concrete data of 100 brains which can easily be tested in other specimens. These include a number of variations, such as the central sulcus communicating with the fissure of Sylvius, regarding which there can be little difference of opinion. There are in all 73 such records, 19 being of the norm and 56 of variations. Each of these records can be entered a second time by subtracting its frequency in percentage from 100. Thus, if the central sulcus communicates with the fissure of Sylvius in 3 per cent of the cases it is called a variation in 3 per cent of the cases, while in the remaining 97 per cent it is normal. In this way I obtained a column of 73 records, representing the norm as well as the variations for each hemisphere both of the male and the female. The average of these figures is as follows:

MEN				WOMEN			
Right Side		Left Side		Right Side		Left Side	
Norm	Variations	Norm	Variations	Norm	Variations	Norm	Variations
78%	22%	75%	25%	81%	19%	81%	19%

This table indicates that the brain of woman is not nearer the norm but varies less than does that of man. Could all the variations found be grouped together in single brains, leaving the rest as perfectly normal, then 76 brains of men and 81 of women out of our 100 would be exactly normal in the arrangement of the gyri and sulci.

Retzius has done us a great service in pointing out the way by which this problem can be attacked by the statistical methods. A few remarks regarding his conclusion may be made, but before they can be criticised properly it will be necessary to tabulate many other brains, as he has done, of both men and women.

Table of Brains Studied

No.	Length of body	Color	Sex	Weight of Brain	WEIGHT OF PARTS OF THE BRAIN (Hardened)				Cerebellum	Per cent to be added to or subtracted from hardened brain to make it equal fresh.	AREA OF SECTION OF CORPUS CALLOSUM		
					Right Side		Left Side				Whole	Genu	H. of Genu
					Anterior	Posterior	Anterior	Posterior					
1405	170	W.	M.	gm.	290	840	265	345	180	6.3	8.0	1.6	
1451	158	B.	M.	gm.	265	885	265	345	170	5.5	2.4	1.4	
1452	158	B.	F.	gm.	250	830	240	320	166	5.9	2.1	1.3	
1453	162	B.	M.	gm.	212	819	201	304	166	5.9	2.3	1.6	
1454	160	B.	M.	gm.	205	265	200	270	160				
1457	178	W.	M.	gm.	280	900	220 <sup>1</sup>	285 <sup>1</sup>	160				
1458	178	W.	M.	gm.	270	845	270	380	170				
1475	178	B.	M.	gm.	220	236	215 <sup>2</sup>	280 <sup>2</sup>	170	5.8	2.3	1.8	
1485	182	W.	F.	gm.	170	230	160	220	130	2.7	2.6	1.3	
1489	191	W.	M.	gm.	240	805	205	295	145	6.9	2.8	1.4	
1493	158	B.	F.	gm.	205	250	205	250	160	5.4	2.3	1.2	
1510	170	W.	M.	gm.	205	290	210	285	155				
1519 <sup>a</sup>	180	B.	M.	gm.	190	250	194	245	160	4.3	1.7	1.0	
1521	158	B.	M.	gm.	225	295	235 <sup>4</sup>	280 <sup>4</sup>	135	6.5	2.5	1.6	
1527	158	W.	F.	gm.	185	255	200	225	120				
1531	165	W.	M.	gm.	220	290	220	300	180	6.4	2.1	1.7	
1532	165	W.	M.	gm.	245	905	240	300	165	6.9	2.7	1.5	
1533	172	W.	M.	gm.	210	235	205 <sup>5</sup>	275 <sup>5</sup>	160	6.5	2.5	1.5	
1535	168	W.	F.	gm.	185	232	185	242	128	6.4	2.3	1.7	
1536	168	B.	M.	gm.	252	855	270	332	132	7.0	2.4	2.0	
1539	178	W.	M.	gm.	250	930	250	330	180				
1540	178	W.	M.	gm.	175	215	175	215	110	4.9	2.2	1.0	
1547	158	W.	F.	gm.	235	815	240	305	155	6.1	2.5	1.5	
1549	160	B.	M.	gm.	190 <sup>6</sup>	230 <sup>6</sup>	200	280	160	1.4	1.4	1.0	
1574	168	W.	M.	gm.	235	310	280	320	150	5.5	2.5	1.4	
1575	185	W.	M.	gm.	225	230 <sup>7</sup>	220	305 <sup>7</sup>	170	7.1	2.3	2.0	
1575	168	B.	M.	gm.	250	815	280	310	150	5.9	2.5	1.5	
1577	175	B.	M.	gm.	245	290	200	280	210	6.1	2.0	1.4	
1581	175	B.	M.	gm.	205	275	210	280	190				
1589	170	B.	M.	gm.	235 <sup>8</sup>	800	250	285 <sup>8</sup>	175	5.8	1.9	1.4	
1590	168	B.	M.	gm.	210	280	210	275	155	5.9	2.3	1.3	
1611	175	B.	F.	gm.	260	280	260	280	170	6.2	2.1	1.5	
1615	175	W.	M.	gm.	260	280	260	280	170	6.3	2.5	1.4	
1636	165	B.	M.	gm.	215	265	210	280	160	6.3	2.2	1.2	

1837	186	W.	M.	1870	280	375	272	882	196	+4	5.4	2.3	1.8
1840	168	W.	F.	1870	283	315	265	315	175	+2	5.7	2.4	1.4
1847	168	B.	F.	1186	180	285	180	260	180	+5	4.8	1.8	1.0
1857	180	B.	M.	1280	285	285	285	285	180	+3	5.6	2.0	1.4
1868	176	W.	M.	1620	285 <sup>9</sup>	385 <sup>9</sup>	285	410	185	+8	6.8	8.4	1.9
1869	168	B.	M.	1160	280	280	240	270	120	+0	6.7	2.3	1.8
1874	178	W.	M.	1160	206	265	206	265	140	+11	5.0	2.0	1.5
1877	165	B.	M.	1340	250	285	255	285	180	+4	5.9	2.2	1.5
1886	176	W.	M.	1490	247	286	247	286	165	+13	5.9	2.2	1.5
1896	186	B.	M.	1310	215	300	225	285	185	+7	5.8	2.2	1.6
1905	186	B.	M.	1460	290	320	255	285	180	+7	6.0	2.1	1.6
1907	168	B.	M.	1205	270	270	205	270	170	+8	6.7	2.2	1.6
1908	168	B.	M.	1240	213	285	218	285	165	+6	5.7	2.2	1.3
1909	168	B.	F.	1120	210	242	200	250	160	+7 <sup>1/2</sup>	7.1	2.7	1.5
1960	178	B.	M.	1360	280	320	265	315	140	+4	5.6	2.2	1.8
1962	147	B.	F.	1220	235	280	230	280	160	+9	4.0	1.5	1.3
1963	165	B.	M.	1260	225	275	230	280	160	+2	6.4	2.7	1.6
1971	176	W.	M.	1380	240	380 <sup>10</sup>	240	320	160	+9	6.6	2.1	1.7
1972	168	W.	F.	1060	173	260	210	245	140	+7	6.4	2.7	1.6
1976	168	B.	M.	1380	215	260	170	245	170	+16	6.6	2.1	1.7
2004	168	B.	F.	1110	200	260 <sup>11</sup>	220 <sup>11</sup>	240	160	+3	6.3	2.8	1.5
2021	168	B.	F.	1400	285	325	265	280	170	+4	7.0	2.7	1.8
2022	165	W.	M.	1460	280	340	270	280	165	+5	6.7	2.8	1.4
2027	165	B.	F.	1800	235	305	280	280	175	+6	6.3	2.3	1.2
2028	176	B.	F.	1200	237	280	200	280	165	+0	6.1	1.9	1.6
2029	170	B.	M.	1860	206	285	200	285	165	+10	6.1	2.2	1.2
2036	169	B.	M.	1860	190	265	240	255	170	+25	6.9	2.2	1.6
2041 <sup>13</sup>	172	W.	M.	1400	280	280	240	280	160	+23	6.1	2.2	1.2
2050	175	B.	M.	1460	280	280	230	285	160	+24	7.3	2.2	1.5
2051	160	B.	M.	1360	225	280	230	280	165	+10	6.7	2.8	1.7
2052	172	B.	M.	1460	270	245	205	285	170	+40	6.7	2.4	1.6
2053	172	B.	M.	1460	210	245	205	285	165	+40	6.6	2.4	1.6
2054	172	B.	M.	1460	215	245	210	285	160	+22	7.5	2.6	1.5
2055	165	B.	M.	1320	200	275	215	275	150	+33	4.4	1.7	1.2
2059	167	B.	M.	1360	206	275	200	285	155	+15	5.8	2.1	1.4
2064	174	B.	M.	1360	255	285	210	270	170	+20	6.8	1.7	1.2
2069	168	B.	M.	1270	205	280	204	280	160	+10	6.4	2.6	1.9
2070	168	B.	F.	1270	205	275	200	280	160	+15	6.4	2.6	1.1
2075	170	W.	M.	1060	186	245	175	245	155	+0	6.3	2.0	1.4
2085	166	B.	M.	1170	190	280	185	285	140	+13	7.1	2.0	1.4
2087	170	W.	M.	1460	240	320	240	310	160	+10	7.1	2.0	1.4
2088	170	B.	M.	1460	240	315	240	310	160	+10	6.9	2.2	1.4
2089 <sup>14</sup>	167	B.	F.	1320	220	285	222	285	165	+8	6.4	2.1	1.2

Table of Brains Studied.—Continued

No.	Length of body	Color	Sex	Weight of Brain	WEIGHT OF PARTS OF THE BRAIN (Hardened)				Cerebellum	AREA OF SECTION OF CORPUS CALLOSUM			
					Right Side		Left Side			Whole	Genu	Hind spine	
					Anterior	Posterior	Anterior	Posterior					
2697	155	B.	F.	1150	225	310	290	309	160	4.3	1.8	sq. cm.	1.0
2708	165	B.	M.	1350	240	335	245	337	170	7.4	2.9	sq. cm.	1.6
2719	167	B.	M.	..	290	365	295	353	182	6.1	2.2	sq. cm.	1.6
2722	..	B.	F.	..	207	296	198 <sup>15</sup>	302 <sup>15</sup>	159	5.0	2.2	sq. cm.	1.1
2731	..	W.	M.	..	225	297	217	305	157	7.2	2.7	sq. cm.	1.7
2732	..	B.	M.	..	225	298	227	302	165	4.5	2.0	sq. cm.	1.3
2743	..	W.	F.	..	227	360	242	340	152	..	..	sq. cm.	..
2746	..	W.	M.	..	240	295 <sup>15</sup>	237	315	170	4.9	1.9	sq. cm.	1.2
2748	..	W.	F.	..	290	345	275	340	290(?)	5.1	2.0	sq. cm.	1.3
2751	..	B.	F.	..	280	250	225	250	155	5.0	2.2	sq. cm.	1.2
2752	..	W.	M.	..	210	277	210	285	130	4.6	2.0	sq. cm.	1.0
2753	..	B.	F.	..	202	275	202	270	135	..	..	sq. cm.	..
2759	..	B.	M.	..	252	345	262	352	165	5.4	2.3	sq. cm.	1.2
2762	..	B.	M.	..	290	335	235	320	165	5.8	2.4	sq. cm.	1.4
2769	..	B.	M.	..	255	320	250	330	185	5.4	2.0	sq. cm.	1.6
2796	..	W.	M.	..	295	368	235	390	170	5.3	2.7	sq. cm.	1.2
2801	164	B.	F.	1500	245	317	250	300	195	5.2	2.1	sq. cm.	1.1
2807	167	B.	M.	1500	235	300	240	315	160	4.6	1.9	sq. cm.	1.0
2810	150	B.	F.	1250	245	305	240	315	160	4.6	1.8	sq. cm.	1.2
2826	162	B.	M.	1450	290	375	290	375	170	6.2	2.4	sq. cm.	1.3
2829	155	B.	M.	1500	310	375	290	365	180	7.3	3.0	sq. cm.	1.3
2833	180	W.	M.	1650	335	420	320	430	195	7.5	3.1	sq. cm.	1.4
2837	161	B.	M.	1400	275	380	280	355	170	6.6	2.8	sq. cm.	1.5
2854	170	B.	M.	1500	290	410	300	400	195	5.9	2.2	sq. cm.	1.4
2857	180	B.	M.	1570	270	385	280	375	170	5.5	2.2	sq. cm.	1.4
2862	167	B.	M.	1320	265	335	290	325	160	6.7	2.5	sq. cm.	1.8
2864	135	B.	M.	1250	270	345	265	340	205	5.6	2.4	sq. cm.	1.6
2865	167	W.	M.	1440	270	340	265	340	160	6.6	2.4	sq. cm.	1.7
2867	167	W.	M.	1440	330	400	330	400	220	6.9	2.5	sq. cm.	1.7
2878	169	B.	F.	970	135	250	190	250	155	5.3	2.0	sq. cm.	1.4
106	Infant	B.	F.	1330	185	350	265	340	155	5.5	2.5	sq. cm.	1.4
108	Infant	B.	F.	..	170	205	157 <sup>16</sup>	219 <sup>16</sup>	137	3.8	1.9	sq. cm.	.8
					90	120	90	120	65	1.3	.2	sq. cm.	.4

169	176	W.	M. (?)	1110	196	250	210	270	160	3.4	1.8	.6
193		B.	M.	960	160	305	170	220	130	4.2	1.7	1.1
196		W.	M.		250	325	250	325	170	6.4	2.9	1.4
3x		B.	M.		230	300	230	280	195			
4x		B.	M.		190	280 <sup>17</sup>	200	260 <sup>17</sup>		4.6	2.0	1.0
	163	B.	F.		210	273	209	276	155			
		W.	M.	1200	230	305	230	305	160			
		W.	M.	1130	235	295	225	305	165			
		W.	M.	1200	240	325	240	315	180			
		W.	M.	1200	240	315	240	315	169			
	175	B.	M.	1520	260	320	265	315	170			
		W.	F.		230	310	230	305	180			
	168	W.	M.		240	320	230	320	140			
		W.	M.							5.0	1.9	1.3
1538		B.	F.							4.8	2.0	1.4
1839		W.	M.							5.8	2.2	1.5
1959		B.	M.							7.0	2.6	1.4
2058		W.	M.							4.7	1.8	1.1
2658		W.	F.							4.2	2.0	1.1
2670		W.	M.							5.3	1.9	1.3

## NOTE TO THE PRECEDING TABLE

The data given in the preceding table have been arranged in a great variety of ways, but only three of these bear upon the subject under discussion. They are given in Figs. 1 to 3. The individual records are appended to enable those who are interested in the subject to make further comparisons with those given by Bean and by Spitzka, as well as for further use to those who may collect new data.

The genu and splenium were outlined by Bean's method, given on pages 37 and 38.

## FOOTNOTE TO THE TABLE

<sup>1</sup> Pia on left side. <sup>2</sup> Pia off on left side. <sup>3</sup> Boy. <sup>4</sup> Break not even on left side. <sup>5</sup> Pia off on left side. <sup>6</sup> Ventricle on right side greatly dilated. <sup>7</sup> Break unsatisfactory. <sup>8</sup> Sulci on both sides very irregular. <sup>9</sup> Pia off on right side. <sup>10</sup> The posterior left is decidedly larger than the posterior right. <sup>11</sup> Left operculum is very large and right parietal convolutions are very atrophic. <sup>12</sup> Curious interlacing of fiber bundles below central fissure on the left side. <sup>13</sup> Boy. <sup>14</sup> Central fissure seems to be double on both sides. <sup>15</sup> Break unsatisfactory. <sup>16</sup> Large cavity in right brain; break also unsatisfactory; break on left side is not accurate. <sup>17</sup> Breaks unsatisfactory. <sup>18</sup> Insane murder.

In the first column of figures in Retzius' table regarding the fissure of Sylvius both the norm and the variation is given, but the missing figures can easily be obtained by subtracting the given percentage from 100. In case the average of a given record is more than 50 in both male and female, it is called normal, while when it is less it is called a variation. Thus the central sulcus anastomoses with the sulcus precentralis superior in 18 per cent of the cases and therefore these do not anastomose in 72 per cent. It may be remarked that the number of brains of men studied by Retzius is somewhat small, while that of women is decidedly too small, for in the latter each single record equals 8 per cent when reduced to the scale of 100.

The data given by Retzius regarding differences in the gyri and sulci due to sex may be criticized from two standpoints. Those in which there is a marked difference between the brains of men and women may be tested by other records. For instance, according to Retzius the anterior branch of the fissure of Sylvius is divided and forms an operculum frontale intermedium in 82 per cent of the brains of men and in 100 per cent in those of women. At this point woman's brain forms a perfect norm, being richer in all cases in gyri and sulci. However, only four specimens of brains of women without an intermediary operculum would have made the results for the two sexes exactly alike. No doubt a larger number of records would have shown, even in Stockholm, that the operculum frontale intermedium is not always present in the female brain. I notice that Karplus, in the article mentioned above, figures four brains of women without the operculum frontale intermedium, and states expressly that it is missing in those four specimens which were found in a relatively small number of brains. His record will bring the chief difference, given by Retzius, pretty close to the male average of 82 per cent. The second criticism can only be made by collecting many more statistics along the lines laid down by Retzius in his great monograph.

At any rate what has been written by Karplus is to the point: "Auf die von den Autoren angegebenen einzelnen Geschlechtsmerkmale der Gehirne, die ja von vielen bestritten werden, will ich hier nicht näher eingehen. Auch hier muss zunächst viel mehr Material gesammelt werden, bisher bin ich nicht davon überzeugt, dass sich aus dem Furchenbild eine Inferiorität des weiblichen Gehirns ableiten liesse."

The question of the type of the female brain, a subject which has been discussed so much, is therefore still far from being solved in a satisfactory manner.

Furthermore, it is by no means established that there are male and female types of the brain due to the form and arrangement of the gyri and sulci, as has been so frequently asserted. Each claim for specific differences fails when carefully tested, and the general claim that the brain of woman type is foetal or of simian type is largely an opinion without any scientific foundation. Until anatomists can point out specific

differences which can be weighed or measured, or until they can assort a mixed collection of brains, their assertions regarding male and female types are of no scientific value. It may turn out, however, that variations in the gyri and sulci will not be of the same percentage in both men and women and that the constant value in the latter will be found more readily, as is the case with other anatomical variations (Schwalbe).

In this study of several anatomical characters said to vary according to race and sex, the evidence advanced has been tested and found wanting. It is found, however, that portions of the brain vary greatly in different brains and that a very large number of records must be obtained before the norm will be found. For the present the crudeness of our method will not permit us to determine anatomical characters due to race, sex or genius and which if they exist are completely masked by the large number of marked individual variations. The study has been still further complicated by the personal equation of the investigator. Arguments for difference due to race, sex and genius will henceforward need to be based upon new data, really scientifically treated and not on the older statements.

## IV

### Racial Differences in Mental Traits<sup>1</sup>

By R. S. Woodworth

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One of the most agreeable and satisfying experiences afforded by intellectual pursuits comes from the discovery of a clean-cut distinction between things which are superficially much alike. The esthetic value of such distinctions may even outweigh their intellectual value and lead to sharp lines and antitheses where the only difference that exists is one of degree. A favorite opportunity for this form of intellectual exercise and indulgence is afforded by the observation of groups of men. The *type* of man composing each group—that is what we should like to find; and we hear much of the “typical” scientist, the typical business man, the typical Englishman or Frenchman, the typical southerner, the typical Bostonian. The type of any group stands as a sort of ideal within the group, and, more or less caricatured, as the butt of the wit of other groups. There is one peculiar fact about these types: you may have to search long for an individual who can be taken as a fair example. And when you have at last found the typical individual, you may be led to ask by what right he stands as the type of the group, if he is a rarity amidst it.

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<sup>1</sup> Reprinted, by permission of the author and editor, from *Science*, N. S. Vol. XXXI, pp. 171-186.



If we would scientifically determine the facts regarding a group of men, we should, no doubt, proceed to examine all the individuals in the group, or at least a fair and honest representation of them. The first fact that meets us when we proceed in this way is that the individuals differ from each other, so that no one can really be selected as representing the whole number. We do find, indeed, when we measure the stature or any bodily fact, or when we test any native mental capacity, that the members of a natural group are disposed about an average, many of them lying near the average, and few lying far above or far below it; and we thus have the average as a scientific fact regarding the group. But the average does not generally coincide with the type, as previously conceived, nor do the averages of different groups differ so much as the so-called types differ. Moreover, the average is itself very inadequate, since it does not indicate the amount of variation that exists within the group—and this is one of the most important facts to be borne in mind in understanding any collection of individuals. It is specially important in comparing different groups of men, since the range of variation within either group is usually much greater than the difference between the averages of the groups. The groups overlap to such an extent that the majority of the individuals composing either group might perfectly well belong to the other.

No doubt statements like this will be readily accepted as far as concerns the different nations belonging to the same race. One could not seriously doubt that the nations of Europe, though they might differ slightly on the average, would so much overlap one another that, except for language and superficial mannerisms, the great majority of the members of one nation might be exchanged with a majority from another nation without altering the characteristics of either. But when we extend our view to all the peoples of the earth, the case would at first appear quite changed. Certainly whites and Negroes do not overlap, to any extent, in color of skin, nor Negroes and Chinamen in kinkiness of hair, nor Indians and Pygmies in stature. Such specialization of traits is, however, the exception. Whites and Negroes, though differing markedly in complexion and hair, overlap very extensively in almost every other trait, as, for example, in stature. Even in brain weight, which would seem a trait of great importance in relation to intelligence and civilization, the overlapping is much more impressive than the difference; since while the brain of Negroes averages perhaps two ounces lighter than the brain of Europeans, the range of variation within either race amounts to 25 ounces.

Our inveterate love for types and sharp distinctions is apt to stay with us even after we have become scientific, and vitiate our use of statistics to such an extent that the average becomes a stumbling-block rather than an aid to knowledge. We desire, for example, to compare the brain weights of whites and of Negroes. We weigh the brains of a

sufficient number of each race—or let us at least assume the number to be sufficient. When our measurements are all obtained and spread before us, they convey to the unaided eye no clear idea of a racial difference, so much do they overlap. If they should become jumbled together, we should never be able to separate the Negroes from the whites by aid of brain weight. But now we cast up the average of each group, and find them to differ; and though the difference is small, we straightway seize on it as the important result, and announce that the Negro has a smaller brain than the white. We go a step further, and class the white as a large-brained race, the Negro as a small-brained. Such transforming of differences of degree into differences of kind, and making antitheses between overlapping groups, partakes not a little of the ludicrous.

We seem to be confronted by a dilemma; for the group as a whole is too unwieldy to grasp, while the average, though convenient, is treacherous. What we should like is some picture or measure of the *distribution* of a given trait throughout the members of a group; and, fortunately, such measures and pictures can be had. Convenient and compact measures of variability are afforded by the science of statistics, and are of no less importance than the average. But still better, because closer to the actual facts, are graphic or tabular pictures of the distribution of the trait, showing the frequency with which it occurs in each degree. The distribution of a trait is for some purposes more important than the average. Let us suppose, for instance, that two groups were the same in their average mental ability, but that one group showed little variation, all of its members being much alike and of nearly the average intelligence, while the other group showed great variability, ranging between the extremes of idiocy and genius. It is evident that the two groups, though equal on the average, would be very unequal in dealing with a situation which demanded great mental ability. One master mind could supply ideas for the guidance of the group, and his value would far outweigh the load of simpletons which the group must carry.

If groups of men differ in average intelligence, this difference would have an influence on their effectiveness in mental work, and so, no doubt, on their advance in civilization. If groups differ in variability, this would probably have a still greater influence. There is one respect in which groups certainly do differ. They differ in size, and size is an important consideration, even from a purely biological point of view. The more numerous the individuals born into a group, the greater the absolute number of gifted individuals to be expected; and in some respects it is the absolute rather than the relative number of able men that counts. Besides this, the larger the group, the greater the chance of its producing a truly effective genius, just as, in the experiments of Burbank and other breeders, a vast number of plants are grown, in order to increase the chance of sports occurring.

One further consideration of this partly biological, partly statistical,

nature should be brought forward before passing from preliminary remarks to the consideration of actual data. When the individuals composing a group are measured or tested in several traits, it is found that those who rank high in one trait do not always rank high in others. On the whole, there is more correspondence than opposition; an individual who ranks well in one trait is rather apt to rank well in others. The correlation, as we say, is positive, but it is far from perfect. The individuals most gifted with ability in war are not altogether the same individuals who are ablest in government, or in art or literature, or in mechanical invention. This fact is not only of importance in reaching a just conception of a group, but it should be considered in comparing different groups. The circumstances surrounding a group call for certain special abilities, and bring to the fore the individuals possessing these abilities, leaving in comparative obscurity those gifted in other directions. Judging the group largely by its prominent individuals, we get the impression that the group is gifted in certain lines, and deficient in others. A nation whose circumstances call for industrial expansion and the exploitation of natural resources gives prominence to those of its members who are successful in these pursuits, and leaves in obscurity many who have native capacity for military leadership. Should war come to such a community, time and bitter experience are often necessary before the leadership can be transferred from the previously eminent men to those obscure and often despised individuals who are capable of doing best service in the new direction. This lack of perfect correlation between various abilities makes it difficult to judge of the capacity of a group of men by casual observation; and we must accordingly discount largely the appearance of specialization of mental traits in different peoples.

All in all, the discovery of true inherent differences between races and peoples is an intricate task, and if we now turn to the psychologist to conduct an examination of different groups, and to inform us regarding their mental differences, we must not allow him to present a hasty conclusion. His tests must be varied and thorough before we can accept his results as a serious contribution to this difficult subject. The psychologist may as well admit at once that he has little to offer; for, though the "psychology of peoples" has become a familiar phrase, and though books have been written on the subject, actual experimental work has so far been very limited in quantity.

One thing the psychologist can assert with no fear of error. Starting from the various mental processes which are recognized in his textbooks, he can assert that each of these processes is within the capabilities of every group of mankind. All have the same senses, the same instincts and emotions. All can remember the past, and imagine objects not present to sense. All discriminate, compare, reason and invent. In all, one impulse can inhibit another, and a distant end can be pursued to the neglect of present incitations. Statements to the contrary, denying

to the savage powers of reasoning, or abstraction, or inhibition, or foresight, can be dismissed at once. If the savage differs in these respects from the civilized man, the difference is one of degree, and consistent with considerable overlapping of savage and civilized individuals. The difference of degree calls for quantitative tests. But besides the traditional classification of mental powers, there is another of perhaps greater importance in studying differences between men. One individual differs from another not so much in power of memory, or of reasoning, or of attention, or of will, as in the sort of material to which he successfully applies these processes. One gives his attention readily to mathematics; he remembers mathematics easily; he reasons well on mathematical subjects; his will is strong in excluding distracting impulses when he is in pursuit of a mathematical goal. He may show none of these powers, in a high degree, in relation to music, or business, or social life; whereas another, totally inefficient in mathematics, may show equal powers of mind in another subject. The capacity to handle a given sort of subject matter is in part determined by native endowment, but is very responsive to training, and therefore is hard to test, because only individuals with equal training in any subject can be fairly tested and compared as to their native capacity to handle that subject. Thus it becomes hard to contrive a test for musical or mathematical or mechanical endowment which could fairly be applied to races having diverse trainings in these lines. This difficulty, moreover, infects our tests for such general powers as memory or reasoning, for a test has to deal with some sort of material, and success in passing the test depends on the familiarity of the material as well as on the power of mind which we design to test. We may suppose, indeed, that all of our tests, founded as they are on material which is familiar to us, will be more or less unfair to peoples of very different cultures and modes of life. The results of our tests need to be discounted somewhat—exactly how much we can not say—in favor of the primitive peoples tested.

We are now, it would seem, sufficiently entrenched in precautions and criticisms to admit the psychologist to our councils, and hear the results of his tests.

First, as to the senses. The point of special interest here is as to whether the statements of many travelers, ascribing to the "savage" extraordinary powers of vision, hearing and smell, can be substantiated by exact tests. The common opinion, based on such reports, is, or has been, that savages are gifted with sensory powers quite beyond anything of which the European is capable; though Spencer explains that this is a cause of inferiority rather than the reverse, because the savage is thus led to rely wholly on his keen senses, and to devote his whole attention to sense impressions, to the neglect and atrophy of his intellectual powers. Ranke, however, on testing natives of Brazil, a race notable for its feats of vision, found that their ability to discern the position of a letter or

similar character at a distance, though good was not remarkable, but fell within the range of European powers. The steppe-dwelling Kalmuks, also renowned for distant vision, being able to detect the dust of a herd of cattle at a greater distance with the naked eye than a European could with a telescope, have also been examined; and their acuity was indeed found to be very high, averaging considerably above that of Europeans; yet only one or two out of the forty individuals tested exceeded the European record, while the great majority fell within the range of good European eyes. Much the same result has been obtained from the Arabs, Egyptians and quite a variety of peoples. Among the most reliable results are those of Rivers on a wholly unselected Papuan population. He found no very exceptional individual among 115 tested, yet the average was somewhat better than that of Europeans. I had myself, through the kindness of Dr. McGee, the opportunity of testing individuals from quite a variety of races at the St. Louis Fair in 1904, and my results agree closely with those already cited, though I did not find any cases of very exceptional powers among about 300 individuals. There were a number who exceeded the best of the 200 whites whom I had also tested under the same conditions, but none who exceeded or equaled the record of a few individuals who have been found in the German army. Indians and Filipinos ranked highest, averaging about 10 per cent better than whites, when all individuals of really defective vision were excluded. The amount of overlapping is indicated by stating that 65-75 per cent of Indians and Filipinos exceeded the average for whites. It did not seem possible, however, to assert anything like a correspondence between eyesight and the degree of primitiveness or backwardness of a people; since, for instance, the Negritos of the Philippine Islands, though much more primitive than the Malayan Filipinos in their mode of life, and, indeed, the most primitive group so far tested, were inferior to the Filipinos, and, in fact, as far as could be judged from the small number examined, no whit superior to whites. Nor does it seem possible, from results hitherto reported, to believe in a close correspondence between keen sight and dark skin, though it is true that pigment is important in several ways to the eye, and that therefore, as Rivers has suggested, the amount of pigmentation might be a factor in vision. But it does not seem to be specially the darkest races that show the keenest vision. We may perhaps conclude that eyesight is a function which varies somewhat in efficiency with difference of race, though with much overlapping. No doubt, however, the results as they stand need some qualification. On the one hand, inclusion of individuals with myopia and similar defects would lower the average of Europeans considerably more than that of most other races; so that the actual condition of eyesight differs more than the results show. On the other hand, it would not be fair to include near-sighted individuals, if what we wish to discover is native differences between peoples; for the different prevalence of myopia is certainly due to the differing uses to

which the eye is put. And this matter of use may have considerable influence on the individuals not classed as near-sighted, and so admitted to the comparison. Rivers has made an observation in connection with the test for eyesight, which I am able to confirm, and which is perhaps of much importance. He found that when the letter or character used in his test, the position of which had to be recognized at the greatest possible distance, was removed from him beyond the distance at which he felt that he could judge it, he could still guess it right nearly every time, though without confidence. By such guessing, one's record in this test can be bettered considerably; and careful study enables one to see the slight and blurred indications of position which form the basis of the guessing. Now it may well be that the occupations of civilized life breed a habit of dependence on clear vision, whereas the life of those who must frequently recognize objects at a great distance breeds reliance on slight indications, and so creates a favorable attitude for the test of eyesight. When this possibility is taken in connection with the deterioration of many European eyes from abuse, and in connection with the observed overlapping of all groups tested, the conclusion is not improbable that, after all, the races are essentially equal in keenness of vision. Even if small differences do exist, it is fairly certain that the wonderful feats of distant vision ascribed to savages are due to practise in interpreting slight indications of familiar objects. Both Rivers and Ranke, on testing some of the very individuals whose feats of keen sight seemed almost miraculous, found that, as tested, they had excellent but not extraordinary vision. A little acquaintance with sailors on shipboard is enough to dispel the illusion that such feats are beyond the powers of the white man.

The hearing of savages enjoys a reputation, among travelers, similar to that of their sight; but there can be little doubt that the cause is the same. In fact, the tests which have so far been made tend to show that the hearing of the whites is superior. Such was the result of Myers on the Papuans, and of Bruner in his extensive series of measurements made at the St. Louis Fair. Only 15 per cent of 137 Filipinos tested did as well as the average of whites; other groups made a somewhat better showing, but all seemed inferior on the average to whites. In spite of the experimental results, there is perhaps reason to doubt that the hearing of whites is essentially and natively much superior to that of other races. Civilized life protects the ear from some forms of injury to which it is exposed in more primitive conditions; and, then, the question of cleanliness must be considered in regard to the meatus. Besides, the ear is known to be highly susceptible of training in the perception of particular sorts of sound—as overtones and difference tones—and it is likely enough that the watch ticks and similar clicks used in the tests are not equally within the repertory of all peoples.

Much the same can be said regarding keenness of smell. On account of the high olfactory powers of dogs and some other lower animals, it has

often seemed natural and proper that this sense should be highly developed among savages; and feats of primitive folk have been reported quite analogous to those already referred to under sight and hearing. No doubt here again, special interests and training are responsible, since what few tests have been made tend to show no higher acuity of smell among Negroes and Papuans than among Europeans.

The sense of touch has been little examined. McDougall found among the Papuans a number with extremely fine powers of discrimination by the skin. The difference between two points and one could be told by these individuals even when the two points were brought very close together; on the average, the Papuans tested excelled Europeans considerably in this test. On the other hand, Indians and Filipinos, and a few Africans and Ainu, tested in the same manner, seem not to differ perceptibly from whites.

The pain sense is a matter of some interest, because of the fortitude or stolidity displayed by some races towards physical suffering. It may be, and has been conjectured, that the sense for pain is blunt in these races, as it is known to be in some individuals who have allowed themselves to be burned without flinching, and performed other feats of fortitude. The pain sense is tested by applying gradually increasing pressure to some portion of the skin, and requiring the person tested to indicate when he first begins to feel pain. Now, as a matter of fact, the results of McDougall on the Papuans, and those of Dr. Bruner and myself on Indians, Filipinos, Africans and Ainu, are in close agreement on this point. Greater pressure on the skin is needed to produce pain in each of these races than in whites. This is the average result, but in this test the distribution of the cases is specially important. Though most whites feel pain at or about a certain small pressure, there is quite a respectable minority who give no sign till much higher pressures are reached, their results corresponding very closely to those of the majority of Indians. And similarly, a minority of Indians feel pain at much lower pressures than the bulk of their fellows, falling into the ranks of the white man. In each group, the distribution is bimodal, or aggregated about two points instead of one; but whites are principally aggregated about the lower center, and Indians and other races about the higher center. Introspection comes to our aid in explaining this anomaly, for it shows that there is some difficulty in telling just when the pressure becomes painful. If one is satisfied with slight discomfort, a moderate pressure will be enough; but if a sharp twinge is demanded, the pressure must be considerably increased. Most whites, under the conditions of the test, are satisfied with slight discomfort, while my impression in watching the Indians was that they were waiting to be really hurt. The racial difference would accordingly be one in the conception of pain, or in understanding the test, rather than in the pain sense.

On the whole, the keenness of the senses seems to be about on a par

in the various races of mankind. Differences exist among the members of any race, and it is not improbable that differences exist between the averages of certain groups, especially when these are small, isolated and much inbred. Rivers has in fact found such small groups differing considerably from whites in the color sense. One such group showed no cases of our common color blindness or red-green blindness, while another group showed an unusually large percentage of color-blind individuals. In the larger groups, the percentage of the color-blind is, very likely, about constant, though the existing records tend to show a somewhat lower proportion among Mongolians than among whites. Very large numbers of individuals need, however, to be tested in order to determine such a proportion closely; even among Europeans, the proportion can not yet be regarded as finally established. One thing is definitely shown by the tests that have been made for color blindness in various races: no race, however primitive, has been discovered in which red-green blindness was the universal or general condition; and this is a fact of some interest in connection with the physiology of color vision, for it seems probable that red-green blindness, since it is not by any means a diseased condition, represents a reversion to a more primitive state of the color sense. If this is so, no race of men remains in the primitive stages of the evolution of the color sense; the development of a color sense substantially to the condition in which we have it, was probably a pre-human achievement.

In the actual history of the discussion of the color sense in various races, quite a different view of the evolution has been prominent. It was Gladstone who first, as an enthusiastic student of Homer, was struck by the poverty of color names in ancient literature, and who suggested that the Greeks of the Homeric age had a very imperfectly developed eye for color. He was especially impressed by the application of the same color name to blue and to gray and dark objects. Geiger, adhering to the same sort of philological evidence, broadened its scope by pointing out the absence of a name for blue in other ancient literatures. It is indeed curious that the sky, which is mentioned hundreds of times in the Vedas and the Old Testament, is never referred to as blue. The oldest literatures show a similar absence of names for green. Geiger found that names for black, white and red were the oldest, and that names for yellow, green and blue have appeared in that order. He concluded that the history of language afforded an insight into the evolution of the color sense, and that, accordingly, the first color to be sensed was red, the others following in the same order in which they occur in the spectrum. Magnus found that many languages at the present day were in the same condition as that shown in the ancient Greek, Hebrew and Sanscrit. Very many, perhaps the majority, have no specific name for blue, and a large proportion have none also for green. A smaller number are without a name for yellow, while nearly all have a name for red. It seemed that the backward races of today had just reached the stage, in the matter of color



sensation, which was attained by other races some thousands of years ago. The underlying assumptions of this argument are interesting—the notion that the list of sensations experienced by a people must find expression in the vocabulary; and the conception of certain peoples now living as really primitive. Fortunately, Magnus submitted this theory to the test of facts, by supplying travelers and traders with sets of colors, by which various peoples were tested, first, as to their ability to name the colors in their own languages, and second, as to their power to recognize and distinguish the colors. The results of this inquiry were that names were often lacking for blue and green, but that every people was able to perceive the whole gamut of colors known to the European. This was a severe blow alike to the philological line of argument and to the ready assumption that early stages of evolution were to be found represented in the backward peoples of today. Accepting the facts as they stood, Magnus still felt that there must be some physiological or sensory reason for the curious lack of certain color names in many languages; and he therefore suggested that blue and green might be less vividly presented by the senses of many tribes, and that, being duller to their eyes than to Europeans, these colors did not win their way into the language. The theory was, however, practically defunct for many years till Rivers recently took it up, as the result of tests on several dark-skinned peoples. His test called for the detection of very faint tints of the various colors, and the result was that, as compared with twoscore educated English whom he also tested, these peoples were somewhat deficient in the detection of faint tints of blue—and also of yellow—but not of red. One group, indeed, was superior to the English in red. The results made it seem probable to Rivers that blue was indeed a somewhat less vivid color to dark-skinned races than to Europeans, and he suggested that pigmentation, rather than primitiveness, might be the important factor in producing this difference. A blue-absorbing pigment is always present in the retina, and the amount of it might very well be greater in generally pigmented races. The suggestion is worth putting to a further test; but, meanwhile, the difference obtained by Rivers in sensitiveness to blue needs to be received with some caution, since the Europeans on whose color sense he relies for comparison were rather few in number, educated and remarkably variable among themselves. We were able, at St. Louis, to try on representatives of a number of races a difficult color matching test, so different indeed from that of Rivers that our results can not be used as a direct check on his, with the result that all other races were inferior to whites in their general success in color matching, but that no special deficiency appeared in the blues. We also could find no correlation between ill success in this test and the degree of pigmentation. On the whole, the color sense is probably very much the same all over the world.

That linguistic evidence is a very treacherous guide to the sensory

powers of a people is well seen in the case of smell. Certainly many odors are vivid enough, yet we have no specific odor names. Only a psychologist would require a complete vocabulary of sensations; practical needs lead the development of language in quite other directions.

When we turn from the senses to other functions, the information which the psychologist has to offer becomes even more scanty.

Some interest attaches to tests of the speed of simple mental and motor performances, since, though the mental process is very simple, some indication may be afforded of the speed of brain action. The reaction time test has been measured on representatives of a few races, with the general result that the time consumed is about the same in widely different groups. The familiar "tapping test," which measures the rate at which the brain can at will discharge a series of impulses to the same muscle, was tried at St. Louis on a wide variety of folk, without disclosing marked differences between groups. The differences were somewhat greater when the movement, besides being rapid, had to be accurate in aim. The Eskimos excelled all others in this latter test, while the poorest record was made by the Patagonians and the Cocopa Indians—which groups were, however, represented by only a few individuals. The Filipinos, who were very fully represented, seemed undeniably superior to whites in this test, though, of course, with plenty of overlapping.

The degree of right-handedness has been asserted to vary in different races, and the favoring of one hand has been interpreted as conducive to specialization and so to civilization. We were, however, unable to detect any marked difference in the degree of right-handedness in different races, as tested by the comparative strength, quickness or accuracy of the two hands. The Negritos, the lowest race examined, had the same degree of right-handedness as Filipinos, or Indians, or whites.

We are probably justified in inferring from the results cited that the sensory and motor processes, and the elementary brain activities, though differing in degree from one individual to another, are about the same from one race to another.

Equitable tests of the distinctly intellectual processes are hard to devise, since much depends on the familiarity of the material used. Few tests of this nature have as yet been attempted on different races.

There are a number of illusions and constant errors of judgment which are well known in the psychological laboratory, and which seem to depend, not on peculiarities of the sense organs, but on quirks and twists in the process of judgment. A few of these have been made the matter of comparative tests, with the results that peoples of widely different cultures are subject to the same errors, and in about the same degree. There is an illusion which occurs when an object, which looks heavier than it is, is lifted by the hand; it then feels, not only lighter than it looks, but even lighter than it really is. The contrast between the look and the feel of the thing plays havoc with the judgment. Women are, on

the average, more subject to this illusion than men. The amount of this illusion has been measured in several peoples, and found to be, with one or two exceptions, about the same in all. Certain visual illusions, in which the apparent length or direction of a line is greatly altered by the neighborhood of other lines, have similarly been found present in all races tested, and to about the same degree. As far as they go, these results tend to show that simple sorts of judgment, being subject to the same disturbances, proceed in the same manner among various peoples; so that the similarity of the races in mental processes extends at least one step beyond sensation.

The mere fact that members of the inferior races are suitable subjects for psychological tests and experiments is of some value in appraising their mentality. Rivers and his collaborators approached the natives of Torres Straits with some misgivings, fearing that they would not possess the necessary powers of sustained concentration. Elaborate introspections, indeed, they did not secure from these people, but, in any experiment that called for straight-forward observation, they found them admirable subjects for the psychologist. Locating the blind spot, and other observations with indirect vision, which are usually accounted a strain on the attention, were successfully performed. If tests are put in such form as to appeal to the interests of the primitive man, he can be relied on for sustained attention. Statements sometimes met with to the effect that such and such a tribe is deficient in powers of attention, because, when the visitor began to quiz them on matters of linguistics, etc., they complained of headache and ran away, sound a bit naive. Much the same observations could be reported by college professors, regarding the natives gathered in their class rooms.

A good test for intelligence would be much appreciated by the comparative psychologist, since, in spite of equal standing in such rudimentary matters as the senses and bodily movement, attention and the simpler sorts of judgment, it might still be that great differences in mental efficiency existed between different groups of men. Probably no single test could do justice to so complex a trait as intelligence. Two important features of intelligent action are quickness in seizing the key to a novel situation, and firmness in limiting activity to the right direction, and suppressing acts which are obviously useless for the purpose in hand. A simple test which calls for these qualities is the so-called "form test." There are a number of blocks of different shapes, and a board with holes to match the blocks. The blocks and board are placed before a person, and he is told to put the blocks in the holes in the shortest possible time. The key to the situation is here the matching of blocks and holes by their shape; and the part of intelligence is to hold firmly to this obvious necessity, wasting no time in trying to force a round block into a square hole. The demand on intelligence certainly seems slight enough; and the test would probably not differentiate between a Newton and you or me; but

it does suffice to catch the feeble-minded, the young child, or the chimpanzee, as any of these is likely to fail altogether, or at least to waste much time in random moves and vain efforts. This test was tried on representatives of several races, and considerable differences appeared. As between whites, Indians, Esquimos, Ainus, Filipinos and Singhalese, the average differences were small, and much overlapping occurred. As between these groups, however, and the Igorot and Negrito from the Philippines and a few reputed Pygmies from the Congo, the average differences were great, and the overlapping was small. Another rather similar test for intelligence, which was tried on some of these groups, gave them the same relative rank. The results of the test agreed closely with the general impression left on the minds of the experimenters by considerable association with the people tested. And, finally, the relative size of the cranium, as indicated, roughly, by the product of its three external dimensions, agreed closely in these groups with their appearance of intelligence, and with their standing in the form test. If the results could be taken at their face value, they would indicate differences of intelligence between races, giving such groups as the Pygmy and Negrito a low station as compared with most of mankind. The fairness of the test is not, however, beyond question; it may have been of a more unfamiliar sort to these wild hunting folk than to more settled groups. This crumb is, at any rate, about all the testing psychologist has yet to offer on the question of racial differences in intelligence.

In the absence of first-hand study of the mental powers of different races, folk psychology resorts to a comparison of their civilizations and achievements. This is the method by which we habitually compare the intelligence of individuals, judging capacity by performance, the tree by its fruits; and such judgments, though subject to occasional error, are probably in the main reliable. Why should we not extend the method to the comparison of groups, and say that a group possessing a high civilization has probably a high average intelligence, while a wild savage race is mentally poorly endowed? The first difficulty in employing the method is to obtain a just estimate of the cultures to be compared. First impressions regarding alien folk, derived from the reports of travelers, are usually wide of the mark. Only the patient and prolonged labors of the ethnologist can inform us as to what a tribe does and thinks; and where such studies have been made, it is found that a backward culture, such as that of the natives of Australia, has much more substance, and affords much wider scope for mental activity, than the early reports indicated.

The difficulty of inferring the mental endowment of a group from its stage of culture is well brought out by applying this method to the comparison of different epochs in the history of a nation. German culture today is much advanced from the days of Cæsar; shall we infer that the mental endowment of the Germans has advanced in like measure? Biologically, the interval, measured in generations, is not long, and from

all biological considerations it is improbable that any advance in mental endowment has occurred. The difference in material civilization does not mean that the German of today is, on the average, gifted with more native inventiveness or business ability than his ancestors sixty generations ago. The difference in the arts and sciences does not mean that the German of today is naturally more studious, or scientific, or musical. The more settled condition of society does not imply greater native capacity for industry or government. The disappearance of old superstitions does not imply that later generations were born without the tendencies to superstition which characterized their fathers. We are still not many generations removed from witchcraft, curses, magic and the like savage beliefs and practices, and we can not reasonably believe our recent forefathers to have been naturally more savage than we are. When, for psychological purposes, we compare the culture of Europe with that of Africa, we should not leave out of account the Children's Crusade, or the Inquisition, or the Wars of the Roses. And if we attempt to use the state of civilization as a measure of racial intelligence, we must somehow adapt the method so that it shall give the same results, whether earlier or later stages in the culture of a group be taken as the basis for study.

In reality, the civilization possessed by a generation can not be used as a measure of the intelligence of that generation any more than an individual's property can be taken as a measure of his business ability. The greatest part of the civilization of a generation is bequeathed to it, and only the increase which it produces can be laid to its credit. If we could compare the rate of progress in different groups, this might serve as a measure of intelligence; and certainly some peoples are more progressive than others. Before adopting such a test, we should understand the mechanism of progress—a matter which belongs only in part to psychology.

Progress depends first of all on human inventiveness—so much will probably be allowed. Under the head of inventions should be included, not only mechanical devices, but works of art and government, business enterprises and changes in custom, so far as any of these demand originality in their producers. Science and all increase in knowledge should also be included, since the process of discovery differs but little from the process of invention. In both the essential mental act seems to be a bringing together of things that are found apart, or a pulling apart of what occurs together. In fact, both of these processes, the combining or associating, and the analytic or discriminating, go on together, since we see something new in a thing when we are reminded by it of something else and different. There is a suggestion of the accidental in all invention, since it depends on "happening to notice something," or "happening to be reminded of something." You can not be sure that a person will make a discovery, even when you supply him with the elements which would combine to produce it. Oftentimes, in reading the

history of scientific progress, one is surprised that a certain discovery was not made by some man who had apparently everything before him to lead to it. Invention is of the nature of a spontaneous variation, and this accidental character is very important in understanding the mechanism of progress.

On the other hand, since one can not be reminded of things entirely unknown, invention depends on previously acquired knowledge, and the inventiveness of an individual must take a direction prepared for him by the social group among which he lives. A large share of the inventiveness of the Australian natives seems to be directed into the channels of magic and ceremony. The finished product of one mind's inventiveness becomes raw material for another, and invention of all sorts is distinctly a cooperative enterprise.

Invention is said to be mothered by necessity; and the proverb is no doubt true in the main, though curiosity and experimentation belong among the play instincts. But, in any case, the necessity must not be too dire, for some degree of leisure is demanded if anything novel is to be thought of, and rapid progress is only possible when individuals can be allowed to accumulate the special knowledge which may serve as the raw material for their inventive activity. Divisions of labor, guilds, universities, legislatures, investigating commissions, permanent research bureaus—each of which is, genetically, a series of inventions—are dependent for their existence on a certain degree of leisure, while they in turn provide more leisure and opportunity for further advance. They are inventions which accelerate the progress of invention. There are thus many factors besides the intellectual endowment of a generation which go to determine the progress which it shall make. The spur of necessity, the opportunity afforded by leisure, the existing stock of knowledge and inventions and the factor of apparent accident or luck have all to be considered.

A still further factor is the size of the group, which is deserving of renewed attention. Not only does a large group afford more opportunity for division of labor and special institutions for research, but the biological consideration already mentioned should be emphasized. The contributions to progress of the average man are small, the inventions of moment arising in the brains of a small fraction of the group. A large group provides a greater number of inventive minds, and it is rather the absolute number of such than their proportion to the whole population that determines the progress of invention within a group. The "group" needs to be redefined from the point of view of invention. If knowledge and inventions pass back and forth between two nations or races, the inventive minds of both are brought into cooperation, and the group is by so much enlarged. From the point of view of progress, however, the question is not simply how many inventive minds are brought into cooperation, but how free and rapid the communication is between them.

At the present time, a discovery originating anywhere in Europe or its colonies is quickly known by specialists in all parts, and may promptly fructify the mind of a distant investigator, leading to a fresh advance. The invention of printing and of rapid means of communication must be credited with a large share of the rapid progress which has been made by the last few generations. Much also must be credited to the invention of steam power, which has vastly multiplied the size of the European group, in an economic sense, and set free many minds of ability for productive thinking. The very idea of the advancement of science and invention as an end to be striven for is to be classed as an invention, and a rather recent one; and it too is an accelerator.

Such considerations provide at least a partial explanation of the different rates of progress in different generations, and among different races. Whether they explain everything could perhaps only be determined by a drastic experiment, which it will do no harm to imagine, though the question will never be settled in this convincing way.

Let two or more habitats, isolated from each other and from the rest of the world, and as nearly as possible alike, be chosen, and peopled by two equal groups of children, selected from some highly civilized nation, and so selected as to represent fairly the distribution of mental and physical traits among that nation. For every individual in the first group, let there be a practically identical individual in the second. Let these groups of children be introduced into their new homes in infancy, and, by some quasi-miraculous means, let them be all preserved to maturity, and then let them, and their descendants, be left entirely to their own devices, without fire, or a language, or other modern improvements. To watch such a spectacle from afar would be thrilling, if not too pitiful. We can readily grant that the infant communities would begin at the very zero of civilization, and that their progress, for many generations, would seem excessively slow. But the real point of the experiment is to inquire whether these two equal groups, alike in numbers, in heredity and in environment, would remain alike, and progress at equal rates. Probably they would not. We must allow for a large element of chance in the mating of males and females within each group, and consequently for changes and inequalities in the distribution and correlation of traits—changes which need not alter the average of either group. We must allow for spontaneous variation in the offspring, another accidental factor by virtue of which a really inventive and effective individual, or conjunction of such, would almost certainly arise in one group earlier than in the other, and give the advance of one group an impetus which might be felt through many generations, and carry this group far ahead of the other. And we must allow also for the accidental factor in invention. Even though the genius of one group was paired by an equal genius in the other, it is improbable that both would invent the same things. One might invent a hunting implement, and the other a fishing implement;

and by this accident the direction of development might be settled for each group. If we closed the experiment after a thousand generations, we should probably find two peoples of different languages, different customs, and cultures divergent in many respects. The supposed result may be taken as an assertion of the importance of accident in determining the destiny of peoples. Obscure causes are no doubt at work beneath the accidents, but we can not trace them, nor reasonably state them in terms of racial superiority and inferiority.

It would seem that size of groups, and accidental factors, exert so much influence on the rate of advance in civilization that differences of culture could possibly be explained without supposing the mental endowments of the races to differ. Whether the existing races of men do or do not differ in such a trait as inventiveness is another and more difficult problem, the settlement of which must be left to time and educational experiments. The experiments must be continued for several generations, in order to equate social traditions. Regarding the Negroes of the South, I am informed by a gentleman who has spent twenty years in educating them that a distinct advance is perceptible during this period, especially among the children of educated parents. These have more educational ambition, enter school earlier and have less to unlearn. The educational experiment, as far as it has gone, thus shows that much time will be needed before a clear result is reached.

Meanwhile it may be allowed to add one more general consideration by asking whether causes of a biological nature can be seen to be at work in human history, such as would differentiate the races intellectually, and, in particular, such as to raise up, in some part of the world, a race superior to the stock from which it sprang.

Natural selection has been suggested as such a cause. Life in the tropics, it has been said, is too easy to demand much inventiveness or forethought, but a migration to colder regions, where the banana does not grow, would make mental activity imperative, and select those individuals who were able to respond, so producing a superior race. There is a difficulty here, since we should expect natural selection to begin by lopping off the most poorly endowed fraction of the population, with the result, finally, that the lower range of intelligence should disappear from the higher races. The lowest grade of intelligence in Europe should accordingly be higher than the lowest grade in Africa. But this is probably not the case; the range of intelligence reaches as low in one as in the other. The distributions of intelligence in the two also overlap to quite an extent. Extensive experiment has shown that Africans can maintain existence in the temperate zone.

Sexual selection, or, more properly, mating customs, furnish a more promising factor. If a tendency could be detected in any population for the most intelligent members to mate with each other, the result would be, not indeed a raising of the average intelligence, since the less intelli-



gent would also mate with each other, but an increase of the variability, and greater chance of the birth of very superior individuals. A caste system might operate in this way, since the founders of aristocratic families probably won admission to the caste partly by virtue of intelligence, and their descendants would tend, by heredity, to exceed the average intelligence of the population. Marriage confined to the caste would thus tend to mate superior individuals with each other, and might, in the course of generations, raise the upper limit of intelligence. Customs of mating within one's rank obtain among the aristocracy and royalty of Europe, and may have been a factor in increasing the number of superior intelligences. But too much can not be attributed to this factor, since the selection has been by classes, and not by individuals. Royalty, while marrying within its rank, has not usually chosen the most gifted individual available. Its selection has been relatively inefficient from the standpoint of royal eugenics. Certainly the upper reach of European intelligence has not been the result of breeding by castes; for, though royalty has indeed produced a disproportionate number of high intelligences, equally able individuals have, as a matter of fact, risen from humble birth. Moreover, marriage in all parts of the world is largely governed by considerations of family standing and wealth, so that the same sort of influence toward variability is everywhere operative. The dead level of intelligence, which is sometimes supposed to obtain among backward races, is not borne out by psychological tests, since individual differences are abundantly found among all races, and, indeed, the variability of different groups seems, from these tests, to be about on a par.

Selection by migration is also to be considered. When individuals leave their group and go to a new country, it would seem that those who emigrate must differ, on the average, from those who remain behind. An adventurous and enterprising spirit, perhaps, would be characteristic of the emigrants, and so of the new people which they helped to form. On the other hand, the ne'er-do-well and the criminal might also be induced to emigrate. The selective influence of migration would not be all in one direction, and the net result could not easily be predicted. Since we are now witnessing, though little comprehending, this process of migration as it contributes to form a people of the future, information regarding the kind of selective influence exerted by migration would have a practical value. Wisdom would dictate that the nation which is in process of formation should exert some selective influence on its own account, but, from all the facts in hand, the part of wisdom would be to select the best individuals available from every source, rather than, trusting to the illusory appearance of great racial differences in mental and moral traits, to make the selection in terms of races or nations.

## V

# The Mind of the Savage<sup>1</sup>

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\* \* \* \* We have been accustomed to think that there is a great gulf between ourselves and other races; and this persists in an undefinable way after scores of Japanese have taken high rank in our schools, and after Hindus have repeatedly been among the wranglers in mathematics at Cambridge. It is only when one of the far eastern nations has come bodily to the front that we begin to ask ourselves whether there is not an error in our reckoning.

The instinct to belittle outsiders is perhaps at the bottom of our delusion that the white race has one order of mind and the black and yellow races have another. But, while a prejudice—a matter of instinct and emotion—may well be at the beginning of an error of this kind, it could not sustain itself in the face of our logical habits unless reinforced by an error of judgment. And this error is found in the fact that in a naïve way we assume that our steps in progress from time to time are due to our mental superiority as a race over the other races (that is, to a superior brain structure) and to the mental superiority of one generation of ourselves over the preceding.

In this we are confusing advance in culture with brain improvement. If we should assume a certain grade of intelligence, fixed and invariable in all individuals, races, and times—an unwarranted assumption, of course—progress would still be possible, provided we assumed a characteristically human grade of intelligence to begin with. With associative memory, abstraction, and speech men are able to compare the present with the past, to deliberate and discuss, to invent, to abandon old processes for new, to focus attention on special problems, to encourage specialization, and to transmit to the younger generation a more intelligent standpoint and a more advanced starting-point. Culture is the accumulation of the results of activity, and culture could go on improving for a certain time even if there were a retrogression in intelligence. If all the chemists in class A should stop work tomorrow, the chemists in Class B would still make discoveries. These would influence manufacture, and progress would result. If a worker in any specialty acquaints himself with the results of his predecessors and contemporaries and

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<sup>1</sup> Extracts reprinted, by arrangements with the publishers, from *Source Book for Social Origins*, pp. 156-169. Copyright (1909) by University of Chicago Press. The price of the volume is four dollars and a half.

works, he will add some results to the sum of knowledge in his line. And if a race preserves by record or tradition the memory of what past generations have done, and adds a little, progress is secured whether the brain improves or stands still. In the same way, the fact that one race has advanced farther in culture than another does not necessarily imply a different order of brain, but may be due to the fact that in the one case social arrangements have not taken the shape affording the most favorable conditions for the operation of the mind.

If, then, we make due allowance for our instinctive tendency as a white group to disparage outsiders, and, on the other hand, for our tendency to confuse progress in culture and general intelligence with biological modification of the brain, we shall have to reduce very much our usual estimate of the difference in mental capacity between ourselves and the lower races, if we do not eliminate it altogether; and we shall perhaps have to abandon altogether the view that there has been an increase in the mental capacity of the white race since prehistoric times.

The first question arising in this connection is whether any of the characteristic faculties of the human mind—perception, memory, inhibition, abstraction—are absent or noticeably weak in the lower races. If this is found to be true, we have reason to attribute the superiority of the white race to biological causes; otherwise we shall have to seek an explanation of white superiority in causes lying outside the brain.

In examining this question we need not dwell on the acuteness of the sense-perceptions, because these are not distinctively human. As a matter of fact some of them are better developed in the animals than in man, and we usually allow that the savage has greater acuity of the senses than the white man. But this is probably an error in the other direction. Bruner has recently determined that the sense of hearing in the savage is actually duller than in the civilized. In his *Hearing of Primitive Peoples* he says: "Not only the intellectual but sensory possibilities are to be stated in terms of the variety of motor response of which the individual is capable. Other things being equal, those individuals or races possessing the greatest complexity and variety of reactions to elements in their respective environments likewise will be gifted with keener and more acute sensory mechanisms." And the superiority of the savage in tracking is not due to superior eyesight but to a skill in interpreting marks, similar to the facility we acquire in reading a badly printed or illegibly written page. On this score, at any rate, we cannot assume a difference between the savage and the civilized unless it is in those cases where different ways of life make the one or the other less habitually attentive and consequently less practiced. The memory of the lower races is also apparently quite as good as that of the higher. The memory of the Australian native or the Eskimo is quite as good as that of our "oldest inhabitant;" and probably no one would claim that the modern scientist has a better memory than the bard of the Homeric period.

There is, however, a prevalent view, for the popularization of which Herbert Spencer is largely responsible, that primitive man has feeble powers of inhibition. Like the equally erroneous view that early man is a free and unfettered creature, it arises from our habit of assuming that, because his inhibitions and unfreedom do not correspond with our own restraints, they do not exist. Sir John Lubbock pointed out long ago that the savage is hedged about by conventions so minute and so mandatory that he is actually the least free person in the world. But, in spite of this, Spencer and others have insisted that he is incapable of self-restraint, is carried away like a child by the impulse of the moment, and is incapable of rejecting an immediate gratification for a greater future one. Cases like the one mentioned by Darwin of the Fuegian who struck and killed his little son when the latter dropped a basket of fish into the water are cited without regard to the fact that cases of sudden domestic violence and quick repentance are common in any city today; and the failure of the Australian blacks to throw back the small fry when fishing is referred to without pausing to consider that our practice of exterminating game and denuding our forests shows an amazing lack of individual self-restraint.

The truth is that the restraints exercised in a group depend largely on the traditions, views, and teachings of the group, and if we have this in mind, the savage cannot be called deficient on the side of inhibition. It is doubtful if modern society affords anything more striking in the way of inhibition than is found in connection with taboo, fetish, totemism, and ceremonial among the lower races. In the great majority of the American Indian and Australian tribes a man is strictly forbidden to kill or eat the animals whose name his clan bears as a totem. The central Australian may not, in addition, eat the flesh of any animal killed or even touched by persons standing in certain relations of kinship to him. At certain times also he is forbidden to eat the flesh of a number of animals, and at all times he must share all food secured with the tribal elders and some others.

A native of Queensland will put his mark on an unripe zamia fruit, and may be sure it will be untouched and that when it is ripe he has only to go and get it. The Eskimos, though starving, will not molest the sacred seal basking before their huts. Similarly in social intercourse the inhibitions are numerous. To some of his sisters, blood and tribal, the Australian may not speak at all; to others only at certain distances, according to the degree of kinship. The west African fetish acts as a police, and property protected by it is safer than under civilized laws. Food and palm wine are placed beside the path with a piece of fetish suspended near by, and no one will touch them without leaving the proper payment. The garden of a native may be a mile from the house, unfenced, and sometimes unvisited for weeks by the owner; but it is immune from depredations if protected by fetish. Our proverb says, "A

hungry belly has no ears," and it must be admitted that the inhibition of food impulses implies no small power of restraint.

Altogether too much has been made of inhibition, anyway, as a sign of mentality, for it is not even characteristic of the human species. The well-trained dog inhibits in the presence of the most enticing stimulations of the kitchen. And it is also true that one race, at least—the American Indian—makes inhibition the most conspicuous feature in its system of education. From the time the ice is broken to give him a cold plunge and begin the toughening process on the day of his birth, until he dies without a groan under torture, the Indian is schooled in the restraint of his impulses. He does not, indeed, practice our identical restraints, because his traditions and the run of his attention are different; but he has a capacity for controlling impulses equal to our own.

Another serious charge against the intelligence of the lower races is lack of the power of abstraction. They certainly do not deal largely in abstraction, and their languages are poor in abstract terms. But there is a great difference between the habit of thinking in abstract terms and the ability to do so.

The degree to which abstraction is employed in the activities of a group depends on the complexity of the activities and on the complexity of consciousness in the group. When science, philosophy, and logic, and systems of reckoning time, space, and number, are taught in the schools; when the attention is not so much engaged in perceptual as in deliberate acts; and when thought is a profession, then abstract modes of thought are forced on the mind. This does not argue absence of the power of abstraction in the lower races, or even a low grade of ability, but lack of practice. To one skilled in any line an unpracticed person seems very stupid; and this is apparently the reason why travelers report that the black and yellow races have feeble powers of abstraction. It is generally admitted, however, that the use of speech involves the power of abstraction, so that all races have the power in some degree. When we come further to examine the degree in which they possess it, we find that they compare favorably with ourselves in any test which involves a fair comparison.

The proverb is a form of abstraction practiced by all races, and is perhaps the best test of the natural bent of the mind in this direction, because, like ballad poetry and slang, proverbial sayings do not originate with the educated class, but are of popular origin. At the same time, proverbs compare favorably with the *mots* of literature, and many proverbs have, in fact, drifted into literature and become connected with the names of great writers. Indeed, the saying that there is nothing new under the sun applies with such force and fidelity to literature that, if we should strip Hesiod and Homer and Chaucer of such phrases as "The half is greater than the whole," "It is a wise son that knows his own father" (which Shakespeare quotes the other end about), and "To make

a virtue of necessity," and if we should further eliminate from literature the motives and sentiments also in ballad poetry and in popular thought, little would remain but form.

On the side of number we have another test of the power of abstraction; and while the lower races show lack of practice in this they show no lack of power. It is true that tribes have been found with no names for numbers beyond two, three, or five; but these are isolated groups, like the Veddahs and Bushmen, who have no trade or commerce, and lead a miserable existence, with little or nothing to count. The directions of attention and the simplicity or complexity of mental processes depend on the character of the external situation which the mind has to manipulate. If the activities are simple, the mind is simple, and if the activities were nil, the mind would be nil. The mind is nothing but a means of manipulating the outside world. Number, time, and space conceptions and systems become more complex and accurate, not as the human mind grows in capacity, but as activities become more varied and call for more extended and accurate systems of notation and measurement. Trade and commerce, machinery and manufacture, and all the processes of civilization involve specialization in the apprehension of series as such. Under these conditions the number technique becomes elaborate and requires time and instruction for its mastery. The advance which mathematics has made within a brief historical time is strikingly illustrated by the words with which the celebrated mathematician, Sir Henry Savile, who died in 1616, closed his career as a professor at Oxford:

"By the grace of God, gentlemen hearers, I have performed my promise. I have redeemed my pledge. I have explained, according to my ability, the definitions, postulates, axioms, and the first eight propositions of the *Elements* of Euclid. Here, sinking under the weight of years, I lay down my art and my instruments."

From the standpoint of modern mathematics, Sir Henry Savile and the Bushmen are both woefully backward; and in both cases the backwardness is not a matter of mental incapacity, but of the state of the science.

In respect, then, to brain structure and the more important mental faculties we find that no race is radically unlike the others. Still, it might happen that the mental activities and products of two groups were so different as to place them in different classes. But precisely the contrary is true. There is in force a principle called the law of parallelism in development, according to which any group takes much the same steps in development as any other. The group may be belated, indeed, and not reach certain stages, but the ground-patterns of life are the same in the lower races and in the higher. Mechanical inventions, textile industries, rude painting, sculpture, poetry, and song, marriage and family life, organization under leaders, belief in spirits, a mythology and some form of church and state exist universally. At one time students of

mankind, when they found a myth in Hawaii corresponding to the Greek story of Orpheus and Eurydice, or an Aztec poem of tender longing in absence, or a story of the deluge, were wont to conjecture how these could have been carried over from Greek or Elizabethan or Hebraic sources, or whether they did not afford evidence of a time when all branches of the human race dwelt together with a common fund of sentiment and tradition. But this standpoint has been abandoned, and it is recognized that the human mind and the outside world are essentially alike the world over; that the mind everywhere acts on the same principles; and that, ignoring the local, incidental, and eccentric, we find similar laws of growth among all peoples.

The number of things which can stimulate the human mind is somewhat definite and limited. Among them, for example, is death. This happens everywhere, and the death of a dear one may cause the living to imagine ways of being reunited. The story of Orpheus and Eurydice may thus arise spontaneously and perpetually, wherever death and affection exist. Or, there may be a separation from home and friends, and the mind runs back in distress and longing over the happy past, and the state of consciousness aroused is as definite a fact among savages as among the civilized. A beautiful passage in Homer represents Helen looking out on the Greeks from the wall of Troy and saying:

"And now behold I all the other glancing-eyed Achaians, whom well I could discern and tell their names; but two captains of the host can I not see, even Kastor tamer of horses and Polydukes the skilful boxer, mine own brethren whom the same mother bare. Either they came not in the company from lovely Lakedaimon; or they came hither indeed in their sea-faring ships, but now will not enter into the battle of warriors, for fear of the many scornings and revilings that are mine."

When this passage is thus stripped of its technical excellence by a prose translation, we may compare it with the following New Zealand lament composed by a young woman who was captured on the island of Tuhua and carried to a mountain from which she could see her home:

"My regret is not to be expressed. Tears, like a spring, gush from my eyes. I wonder whatever is Tu Kaiku [her lover] doing, he who deserted me. Now I climb upon the ridge of Mount Parahaki, whence is clear the view of the island of Tuhua. I see with regret the lofty Tanmo where dwells [the chief] Tangiteruru. If I were there, the shark's tooth would hang from my ear. How fine, how beautiful should I look! . . . . But enough of this; I must return to my rags and to my nothing at all."

The situation of the two women in this case is not identical, and it would be possible to claim that the Greek and Maori passages differ in tone and coloring; but it remains true that a captive woman of any race, will feel much the same as the captive woman of any other race when her thoughts turn toward home, and that the poetry growing out of such a situation will be everywhere of the same general pattern.

Similarly, to take an illustration from morals, we find that widely different in complexion and detail as are the moral codes of lower and higher groups, say the Hebrews and the African Kafirs, yet the general patterns of morality are strikingly coincident. It is reported of the Kafirs that "they possess laws which meet every crime which may be committed." Theft is punished by restitution and fine; injured cattle, by death or fine; false witness, by a heavy fine; adultery, by fine or death; rape, by fine or death; poisoning or witchcraft, by death and confiscation of property; murder, by death or fine; treason or desertion from the tribe, by death and confiscation. The Kafirs and Hebrews are not at the same level of culture, and we miss the more abstract and monotheistic admonitions of the higher religion—"thou shalt not covet; thou shalt worship no other gods before me"—but the intelligence shown by the social mind in adjusting the individual to society may fairly be called the same grade of intelligence in the two cases.

When the environmental life of two groups is more alike and the general cultural conditions more correspondent, the parallelism of thought and practice becomes more striking. The recently discovered Assyrian Code of Hammurabi (about 2500 B. C.) contains striking correspondences with the Mosaic code; and while Semitic scholars probably have good and sufficient reasons for holding that the Mosaic code was strongly influenced by the Assyrian, we may yet be very confident that the two codes would have been of the same general character if no influence whatever had passed from one to the other.

The institutions and practices of a people are a product of the mind; and if the early and spontaneous products of mind are everywhere of the same general pattern as the later manifestations, only less developed, refined, and specialized, it may well be that failure to progress equally is not due to essential unlikeness of mind, but to conditions lying outside the mind.

Another test of mental ability which deserves special notice is mechanical ingenuity. Our white pre-eminence owes much to this faculty, and the lower races are reckoned defective in it. But the lower races do invent, and it is doubtful whether one invention is ever much more difficult than another. On the psychological side, an invention means that the mind sees a roundabout way of reaching an end when it cannot be reached directly. It brings into play the associative memory, and involves the recognition of analogies. There is a certain likeness between the flying back of a bough in one's face and the rebound of a bow, between a serpent's tooth and a poisoned arrow, between floating timber and a raft or boat—and water, steam, and electricity are like a horse in one respect—they will all make wheels go around, and do work.

Now, the savage had this faculty of seeing analogies and doing things in indirect ways. With the club, knife, and sword he struck more effectively than with the fist; with hooks, traps, nets, and pitfalls he under-



stood how to seize game more surely than with the hands; in the bow and arrow, spear, blow-gun, and spring-trap he devised motion swifter than that of his own body; he protected himself with armor imitated from the hides and scales of animals, and turned their venom back on themselves. That the savage should have originated the inventive process and carried it on systematically is, indeed, more wonderful than that his civilized successors should continue the process; for every beginning is difficult.

When occupations become specialized and one set of men has continually to do with one and only one set of machinery and forces, the constant play of attention over the limited field naturally results in improvements and the introduction of new principles. Modern inventions are magnificent and seem quite to overshadow the simpler devices of primitive times; but when we consider the precedents, copies, resources, and accumulative knowledge with which the modern investigator works, and, on the other hand, the resourcelessness of primitive man in materials, ideas, and in the inventive habit itself, I confess that the bow and arrow seems to me the most wonderful invention in the world.

Viewing the question from a different angle, we find another argument for the homogeneous character of the human mind in the fact that the patterns of interest of the civilized show no variation from those of the savage. Not only the appetites and vanities remain essentially the same, but, on the side of intellectual interest, the type of mental reaction fixed in the savage by the food-quest has come down unaltered to the man of science as well as to the man of the street. In circumventing enemies and capturing game, both the attention and the organic processes worked together in primitive man under great stress and strain. Whenever, indeed, a strain is thrown on the attention, the heart and organs of respiration are put under pressure also in their effort to assist the attention in manipulating the problem; and these organic fluctuations are felt as pleasure and pain. The strains thrown on the attention of primitive man were connected with his struggle for life; and not only in the actual encounter with men and animals did emotion run high, but the memory and anticipation of conflict reinstated the emotional conditions in those periods when he was meditating future conflicts and preparing his bows and arrows, traps and poisons. The problem of invention, the reflective and scientific side of his life, was suffused with interest, because the manufacture of the weapon was, psychologically speaking, a part of the fight.

The fundamental explanation of the difference in the mental life of two groups is not that the capacity of the brain to do work is different, but that the attention is not in the two cases stimulated and engaged along the same lines. Wherever society furnishes copies and stimulations of a certain kind, a body of knowledge and a technique, practically all its members are able to work on the plan and scale in vogue there, and

members of an alien race who become acquainted in a real sense with the system can work under it. But when society does not furnish the stimulations, or when it has preconceptions which tend to inhibit the run of attention in given lines, then the individual shows no intelligence in these lines.

## VI

### Old African Civilizations<sup>1</sup>

By Franz Boas

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\* \* \* \* The achievements of races are not only what they have done during the short span of two thousand years, when with rapidly increasing numbers the total amount of mental work accumulated at an ever increasing rate. In this the European, the Chinaman, the East Indian, have far outstripped other races. But back of this period lies the time when mankind struggled with the elements, when every small advance that seems to us now insignificant was an achievement of the highest order, as great as the discovery of steam power or of electricity, if not greater. It may well be, that these early inventions were made hardly consciously, certainly not by deliberate effort, yet every one of them represents a giant's stride forward in the development of human culture. To these early advances the Negro race has contributed its liberal share. While much of the history of early invention is shrouded in darkness, it seems likely that at a time when the European was still satisfied with rude stone tools, the African had invented or adopted the art of smelting iron.

Consider for a moment what this invention has meant for the advance of the human race. As long as the hammer, knife, saw, drill, the spade and the hoe had to be chipped out of stone, or had to be made of shell or hard wood, effective industrial work was not impossible, but difficult. A great progress was made when copper found in large nuggets was hammered out into tools and later on shaped by melting, and when bronze was introduced; but the true advancement of industrial life did not begin until the hard iron was discovered. It seems not unlikely that the people that made the marvelous discovery of reducing iron ores by smelting were the African Negroes. Neither ancient Europe, nor ancient western Asia, nor ancient China knew the iron, and everything points to its introduction from Africa. At the time of the great African discoveries towards the end of the past century, the trade of the blacksmith was found all over Africa, from north to south and from east to west. With his simple bellows and a charcoal fire he reduced the ore that is found in many parts of the continent and forged implements of great usefulness and beauty.

<sup>1</sup> Extracts reprinted from Atlanta University Leaflet No. 19, a Commencement Address delivered by Dr. Boas at Atlanta University, May 31, 1906.

Due to native invention is also the extended early African agriculture, each village being surrounded by its garden patches and fields in which millet is grown. Domesticated animals were also kept; in the agricultural regions chickens and pigs, while in the arid parts of the country where agriculture it not possible, large herds of cattle were raised. It is also important to note that the cattle were milked, an art which in early times was confined to Africa, Europe and northern Asia, while even now it has not been acquired by the Chinese.

The occurrence of all these arts of life points to an early and energetic development of African culture.

Even if we refrain from speculating on the earliest times, conceding that it is difficult to prove the exact locality where so important an invention was made as that of smelting iron, or where the African millet was first cultivated, or where chickens and cattle were domesticated, the evidence of African ethnology is such that it should inspire you with the hope of leading your race from achievement to achievement. Shall I remind you of the power of military organization exhibited by the Zulu, whose kings and whose armies swept southeastern Africa. Shall I remind you of the local chiefs, who by dint of diplomacy, bravery and wisdom united the scattered tribes of wide areas into flourishing kingdoms, of the intricate form of government necessary for holding together the heterogeneous tribes.

If you wish to understand the possibilities of the African under the stimulus of a foreign culture, you may look towards the Soudan, the region south of the Sahara. When we first learn about these countries by the reports of the great Arab traveller Iben Batuta, who lived in the 14th century, we hear that the old Negro kingdoms were early conquered by the Mohammedans. Under the guidance of the Arabs, but later on by their own initiative, the Negro tribes of these countries organized kingdoms which lived for many centuries. They founded flourishing towns in which at annual fairs thousands and thousands of people assembled. Mosques and other public buildings were erected and the execution of the laws was entrusted to judges. The history of the kingdom was recorded by officers and kept in archives. So well organized were these states that about 1850, when they were for the first time visited by a white man, the remains of these archives were still found in existence, notwithstanding all the political upheavals of a millennium and notwithstanding the ravages of the slave trade.

I might also speak to you of the great markets that are found throughout Africa, at which commodities were exchanged or sold for native money. I may perhaps remind you of the system of judicial procedure, of prosecution and defense, which had early developed in Africa, and whose formal development was a great achievement notwithstanding its gruesome application in the persecution of witchcraft. Nothing, perhaps, is more encouraging than a glimpse of the artistic industry of native Africa. I regret that we have no place in this country where the beauty and dainti-

ness of African work can be shown; but a walk through the African museums of Paris, London and Berlin is a revelation. I wish you could see the scepters of African kings, carved of hard wood and representing artistic forms; or the dainty basketry made by the people of the Kongo river and of the region near the great lakes of the Nile, or the grass mats with their beautiful patterns. Even more worthy of our admiration is the work of the blacksmith, who manufactures symmetrical lance heads almost a yard long, or axes inlaid with copper and decorated with filigree. Let me also mention in passing the bronze castings of Benin on the west coast of Africa, which, although perhaps due to Portuguese influences, have so far excelled in technique any European work, that they are even now almost inimitable. In short, wherever you look, you find a thrifty people, full of energy, capable of forming large states. You find men of great energy and ambition who hold sway over their fellows by the weight of their personality. That this culture has, at the same time, the instability and other signs of weakness of primitive culture goes without saying.

\* \* \* \* This picture of native Africa will inspire strength, for all the alleged faults of your race that you have to conquer here are certainly not prominent there. In place of indolence you find thrift and ingenuity, and application to occupations that require not only industry, but also inventiveness and a high degree of technical skill, and the surplus energy of the people does not spend itself in emotional excesses only. . . .

To those who stoutly maintain a material inferiority of the Negro race and who would dampen your ardor by their claims, you may confidently reply that the burden of proof rests with them, that the past history of your race does not sustain their statement, but rather gives you encouragement. The physical inferiority of the Negro race, if it exists at all, is insignificant when compared to the wide range of individual variability in each race. There is no anatomical evidence available that would sustain the view that the bulk of the Negro race could not become as useful citizens as the members of any other race. That there may be slightly different hereditary traits seems plausible, but it is entirely arbitrary to assume that those of the Negro, because perhaps slightly different, must be of an inferior type.

The arguments for inferiority drawn from the history of civilization are also weak. At the time when the early kingdom of Babylonia flourished the same disparaging remarks that are now made regarding the Negro might have been made regarding the ancestors of the ancient Romans. They were then a barbarous horde that had never made any contribution to the advance of that civilization that was confined to parts of Asia, and still they were destined to develop a culture which has become the foundation and an integral part of our own. Even later the barbarous hordes of northern Europe, who at the time of the ancient Romans were tribal groups without cultural achievements, have become the most advanced nations of our days. . . .

## VII

# The Contribution of the Negro to Human Civilization<sup>1</sup>

By Alexander Francis Chamberlain, Ph. D.

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\* \* \* \* Only individuals immune to the teachings of evolution could imagine that a race, millenniums old, and numbering today after centuries of more or less brutal contact with the whites, more than 150,000,000, could have existed or could continue to exist, without in the slightest influencing the currents of human thought and action. It is with eyes blind to the results of the most recent investigations of the origin and the development of Negro culture in Africa, and to the achievements of the race in other parts of the globe that such people content themselves with repeating words of prejudiced origin, which have long since lost significance, and with seeing in the Negro only a beast or a half-man. There are various ways of estimating or judging the capacities of a race for progress and its contributions to our human civilization. Here we shall content ourselves with three, viz., (1) *the appearance of individual Negroes, or of individuals with admittedly Negro blood, from time to time, in the midst of cultures not of native African origin*; (2) *the debt of mankind to the Negroes in the matter of industry, inventions, art, etc., in the achievements of the Black Race as such in the various branches of human civilization*; (3) *the achievements of Negroes removed from their home-land in childhood and educated under European auspices, etc.* Under each of these three heads there is now a considerable amount of data available which can be but briefly set forth here.

### I

The contributions of the Negro to human civilization are innumerable and immemorial. Let us first get some glimpses of him, chiefly as an individual, in contact with the past of other cultures than his own. Ancient Egypt knew him, both bond and free, and his blood flowed in the veins of not a few of the mighty Pharaohs. Nefertari, the famous Queen of Aahmes, the King of Egypt, who drove the Hyksos from the land and founded the 18th Dynasty (ca. 1700 B. C.), was a Negress of great beauty, strong personality, and remarkable administrative ability. She was for years associated in the government with her son, Amen-hotep I, who succeeded his father. Queen Nefertari was highly venerated and

<sup>1</sup> Extracts reprinted, by permission of the editors, from *The Journal of Race Development*, Vol. 1, No. 4, pp. 482-500.

many monuments were erected in her honor; she was venerated as "ancestress and founder of the 18th Dynasty" and styled "the wife of the god Ammon," etc. Another strain of Negro blood came into the line of the Pharaohs with Mut-em-ua, wife of Thothmes IV, whose son, Amen-hotep III, had a negroid physiognomy. Amen-hotep III was famous as a builder and his reign (ca. 1400 B. C.) is distinguished by a marked improvement in Egyptian art and architecture. He it was who built the great temple of Ammon at Luxor and the colossi of Memnon. Besides these marked individual instances, there is the fact that the Egyptian race itself in general had a considerable element of Negro blood, and one of the prime reasons why no civilization of the type of that of the Nile arose in other parts of the continent, if such a thing were at all possible, was that Egypt acted as a sort of channel by which the genius of Negroland was drafted off into the service of Mediterranean and Asiatic culture. In this sense Egyptian civilization may be said, in some respects, to be of Negro origin. Among the Semitic peoples whose civilizations were so numerous and so ancient on the shores of the Mediterranean and throughout western Asia, the Negro, as in Egypt, made his influence felt, from the lowest to the highest walks of life, sometimes as a slave, sometimes as the freest of citizens. As cup-bearer, or confidential adviser, he stood next to kings and princes and as faithful eunuch he enhanced and extended the power of the other sex in lands where custom confined them to the four walls of their dwellings or restricted to the utmost their appearance and their actions in public. And women from Ethiopia, "black but comely," wives of favorite slaves of satraps and of kings, often were the real rulers of Oriental provinces and empires. Nor have the Negroes in these Asiatic countries been absent from the ranks of the musician and the poet, from the time of Solomon to that of Haroun al Raschid and beyond in the days of Emirs and Sultans. One must not forget the Queen of Sheba, with her dash of Negro blood, said, together with that of the great Solomon, to have been inherited by the sovereigns of Abyssinia. When under the brilliant dynasty of the Ommiades (661-750 A. D.), the city of Damascus was one of the glories of the world, its galaxy of five renowned poets included Nosseyeb, the Negro. And we can cross the whole of Asia and find the Negro again, for, when, in far-off Japan, the ancestors of the modern Japanese were making their way northward against the Ainu, the aborigines of that country, the leader of their armies was Sakanouye Tamuramaro, a famous general and a Negro.

Passing down European history, we find traces of the Negro in many high places. In France, during the reign of Louis XVI, we meet with the Chevalier Sainte-Georges, knighted by that monarch. Later on, the mulatto, Lislet Geoffroy, a corresponding member of the French Academy. In 1874, the doors of the Institut de France opened wide to Alexandre Dumas (fils), whose great-grandmother was a pure-bred Haitian Negress. Her grandson was also a distinguished man of letters.

Among the favorites of Peter the Great and his famous consort Catharine, was an Abyssinian Negro educated in France, to whom was attached the name of Hannivalov, who became a general and received other honors from the Russian government. He married the daughter of a Greek merchant, and his son became a general of artillery, who built the harbor and fortress of Cherson. The grandson of Hannivalov was A. S. Pushkin (1799-1837) perhaps the greatest of all Russian poets.

In Spain, where, besides, some diluted Negro blood came in with the Moors, we find a remarkable remembrancer of the black man in the field of art. In one of the churches of Seville are to be seen four beautiful pictures (Christ bound to a column, with St. Peter kneeling at his side; St. Joseph; St. Anne; Madonna and Child), the work of the mulatto, Sebastian Gomez, the slave, then the pupil, the companion and the equal of his master, the great painter Murillo, who had him made a free citizen of Spain, and at his death (1682), left him part of his estate. And, in their voyages and travels the Spaniards in the New World had the services of the Negro. The first man to reach the land of the Seven Cities of Cibola, and open the Southwest of what is now the United States of America, was the Negro Estevancillo; and the vessel of Captain Arellano (1564-1565), the first to make the return voyage across the Pacific from the East Indies to Mexico was steered by a mulatto pilot. . . .

## II

Now let us turn more particularly to achievements of race *en masse*. In comparing the achievements of the African Negroes with those of the European and Asiatic whites, it must be remembered that the latter have had continuously the advantage of the best possible environment in the world, and the former as continuously the disadvantage of the worst. In other words, the whites have been notably bonused by nature at the start; and the number and character of historical experiences which they must inevitably have undergone, quite regardless of their intellectual or other endowments, have been entirely in their favor.

The tremendous effect of a favorable environment is seen in the history of the white race in the region of the Mediterranean. Europe, Asia and Africa have furnished there examples of culture of a high grade in which all varieties of the so-called Caucasian type seem to have participated. Indeed, any people, sufficiently numerous to have established somewhat large fixed communities, was reasonably sure of being an important member of the Mediterranean series of great cities, kingdoms, empires, etc., and of being remembered for something of value in the civilization which the world has inherited from the nations of the Mediterranean past and present. From prehistoric times to our own day and generation, one race only, the Negro, by reason, probably, of being cut off by desert or sea, during a long period of its existence, and, therefore secluded in Africa beyond the "thin line" of the white race on the north,

seems never to have intruded into the Mediterranean area (or to have settled there in any locality) in sufficiently large numbers to have undergone the same historical experience, and to have submitted to the same genial influences of environment so stimulating to the other races, which, in that region, reached so remarkable a stage of social, political, religious and intellectual evolution. Out of the coming and going of peoples in the Mediterranean area, from the necessities of intercommunication among its innumerable centers of culture, arose things, which the more or less monotonous and secluded African land-areas seemed not to suggest or to demand. Thus the appearance of the alphabet was as natural in the Mediterranean region at a comparatively early period, as it was improbable and unexpected in prehistoric Negroland. So, too, the very same phenomena permitted an earlier disappearance from white civilization of many ideas and institutions, the retention of which among the African Negroes is more a natural result of their seclusion than an index of their intelligence. Such causes and factors of the retardation of Negro culture as slavery, polygamy, the belief in witchcraft, etc., are among these. Here, again, we must be just in our denunciation of these evils. Our own escape from the institution of slavery is still too recent to make us very honest boasters (and less than ten years ago we gave it a new lease of life under our flag in the Sulu Islands).

#### Political and Social Organization

That some of the Negro peoples of Africa possess actual genius for social and political organization has been demonstrated again and again, particularly in the Sudan (both before and after Arab influence), and among the Bantu peoples further to the South. An opinion long held in certain quarters that these developments of Negro civilization were entirely due to the Arab and Mohammedan influences of the period beginning with about 750 A. D., and to earlier Egyptian and Semitic contacts, can no longer be sustained. That there has been at the bottom of them a basis of real Negro culture is now apparent from the archeological and ethnological researches of German, French and English investigators in the Sahara, the Sudan and West Africa. What a few travelers at the close of the Middle Ages reported they had seen has now been confirmed by unimpeachable evidence. "Negro culture" is now no more to be denied than the existence of the Pigmies, which once rested almost solely on the statements of Herodotus. The very recent investigations and studies of Desplagnes, von Luschan, Frobenius, Weule, etc., are adding more and more to the culture phenomena, which the Negroes may be said themselves to have originated, or having borrowed from other peoples, to have skilfully adopted or improved for their own uses. Back of the stone figures of Sherbro, the megaliths of the Gambia, the bronzes of Benin, and other little known aspects of West African art and architecture, as well as behind the organized political developments in the



Sudan, etc., lie things that are not easily to be explained as merely waifs from Egypt or later unintentional gifts from the white race. Here, again, the view may open wide and far. Frobenius, who believes that a Negro culture of a rather high type, once existed in West Africa, christens it "Atlantic," and is inclined to think that the Egyptian and Mediterranean legends immortalized in the "Atlantis" of Plato may have had a very real foundation in distorted accounts or forgotten memories of this African culture, which some day may have its Odyssey corroborated as Schliemann did for Troy. And West Africa is the real Negro country from which so many of the slave ancestors of the Afro-Americans were stolen away. Liberia, too, lies in this land, and her hopes of the future ought to be touched by some reflection from this great past.

Long before the Mohammedan advent, kings and empires existed in Negro Africa. It seems, too, that, subsequently, when the first rush of Arab contact was over, the pure Negro element again came into control in many cases and carried on indigenous culture, with the skilful adaptation of foreign elements, to still higher stages of development. The comparison of Negro Africa with contemporary Medieval Europe is most interesting and convincing here. The sociological and political phenomena in both regions of the globe at that time are strikingly similar. Parallels for the feudal system, the rise and development of the judiciary, the evolution of international law, the rôle of the market and the fair, and many other things could as well be studied in the one as in the other. The rise of innumerable small states and their ultimate consolidation into large kingdoms and extensive empires are equally characteristic of both. Negro Africa, too, at this period, and since then also, has in like manner produced kings and political organizers, who have been men of genius possessing great personalities, and ranking in character and ability with the princes and sovereigns of Europe at the time. Such, *e. g.*, were the men who ruled the great kingdoms and empires of the Sudan, some of which lasted down to the middle of the 19th century, when the European mass-contact with this part of the Dark Continent practically began. If anyone really wants to know (to use the words of Dr. F. Boas), "what the Negro has done in Africa," let him look into the history of the Negro kingdoms of Ghana and Songhai, the Empire of Lunda, Bornu, the Kingdom of Katsena, etc. Let him read of the great cities with Negro Africa, such as Engornu (in Bornu) and Timbuktu, etc., with their from 30,000 to 50,000 inhabitants; Kana in Hausa-land, etc. Barth, the German traveler, who visited this part of Negro Africa in 1851-1855, has left on record his impressions of its civilization and of the men who created and sustained it. Men like King Askia of Songhai and Bello, the Sultan of Katsena, who has been called "the Napoleon of the Sudan" deserve rank among the great figures of the world's history. They are the undeniable proof that the Negro race is thoroughly human in its ability to produce men of genius. In personal character, in administrative ability,

in devotion to the welfare of his subjects, in open-mindedness towards foreign influences, and in wisdom in the adoption of non-Negro ideas and institutions, King Askia, who ruled over Songhai in the early part of the 16th century, was certainly the equal of the average European monarchs of the time and the superior of many of them. Among the Bantu peoples of South Africa (*e. g.*, the Zulus, etc.), great capacity for survival by means of political and social organization has been shown in some cases and also considerable advance toward the ultimate creation of a Christian Negro nation at some time in the future. One of the Bantu peoples, the Ovampo, has already proceeded so far along the road to self-government, after our own ideas, that it has got rid of its old line of hereditary kings and set up a sort of republic.

#### Commerce, etc.

At the period of early contact with the whites, the great skill and *finesse* of the African Negroes in matters of trade were constantly in evidence and became a thing to be described epigrammatically in proverbs, one of which ran to the effect that a Negro could beat a Jew or an Armenian. And in the chronicles for the period of European advance, we meet frequently the question, what will happen "if the blacks got full possession of our culture," seeing they can already outdo us with their own? It has been said epigrammatically on this point that "the African's weakness is not in getting wealth, but in keeping it." The institution of the market and the fair, *e. g.*, among the Negro peoples of the Sudan and the development out of it of the village, the town and the city, are one of the most interesting phenomena in all the history of human culture. Among the questions involved in the evolution of the market and the fair are: the greater share of women in public and semi-public activities; the breaking down of the narrowness of mere tribal boundaries and clan-instincts, consequent upon the gathering together of so many people at repeated intervals; the movement toward abolition of war through the institution of the market-peace and the prohibition of all hostile acts during the time of prevalence of fairs, markets, etc.; the amalgamation of peoples resulting from the ultimately permanent character of these markets and fairs, and the absorption of those conducting them more or less into the general population by the consolidation of the temporary city without the walls with the old city within them; the influence upon the general honesty and morality of the community of the increasing importance of the right of asylum, the protection of the stranger within and without the gates, the necessity of honest weights and measures; the autonomy of the market, the market-tax with its corollary of protection or free-trade; the question of the laborer and his hire; the market-holiday and its relations to religious and other festivals and ceremonial occasions, etc. Indeed, as one looks over the long list of questions here at issue, one sees that practically no question that is at

present a matter of discussion among ourselves, or has been such in the progress of our civilization, can be mentioned, which has not been involved in the commercial and the economic development of Negro Africa.

#### Domesticated Animals

Africa is undoubtedly the home of the wild ancestors of several species of domestic animals and likewise the continent which saw the first shaping of some of them under the hands of man. And it is quite reasonable to suppose that in certain cases the beginnings of such domestication are to be traced to the Negro peoples, whose achievements in this field were added to and given wide extension by the Egyptians, especially, and by the races of other lineage who took part in the civilizations of the Mediterranean and of Western Asia. Cattle-keeping and cattle-breeding is an art ancient and now widespread in Negro Africa. With some tribes cattle have entered into the economic and the ideal life of the people as has the horse, or the sheep with certain Semitic and Aryan nations, and, as with them, given a distinct color and tone to language and literature. The skill attained by some of the Bantu tribes in the maintenance and the utilization of domestic cattle is remarkable. Cattle-milking, an accomplishment, which is far from being universally human, either in the individual or in the race, is old in parts of Negro land. And here, it is worth noting that a civilization as ancient and as important as that of China has not yet added to its common factors of economic survival the dairy and its attendant developments. And the same might be said of the younger civilization of the Japanese, as it could also have been said of more than one of the ancient civilizations of the Occident, whose range of culture did not include the employment of the milk of the cow in human economy. . . . .

#### Art, etc.

Far from possessing no art, the African Negroes have created some of the most beautiful art-objects to be found in any museum in the wide world. We have not yet, as Dr. Boas has pointed out, in this country a museum to illustrate fully and adequately the art of the native Africans, but in several of the European museums, these are admirably, if not exhaustively, represented. Dr. Frobenius, in his study of African civilizations, says: "The real African need by no means resort to the rags and tatters of bygone European splendor. He has precious ornaments of his own, of ivory and feathers, fine plaited willow-ware, weapons of superior workmanship. Nothing more beautiful, for instance, can be imagined than an iron club carefully wound round with strips of metal, the handle covered with snake-skin." And Dr. Boas has recently called attention to the "dainty basketry" of the Congo and the Nile Lakes, the "grass mats of most beautiful patterns" made by some of the Negro tribes, and "the beautiful iron weapons of Central Africa, which excel in symmetry of form, and many of which bear elaborate designs inlaid in copper, and are of ad-

mirable workmanship." The famous bronzes of Benin, about which there has recently been so much discussion, have, perhaps, been stimulated in form and in the figures designed by Portuguese and Hindu art, but they "are far superior in technique to any European work (Boas)," and their existence indicates an artistic past for certain regions of West Africa hitherto quite unsuspected.

#### Musical Instruments, etc.

While the question of our musical instruments is as yet far from being satisfactorily settled, it would be strange indeed if so musical a race as the African Negroes had had nothing to do with their origin or their development. Negro Africa possesses many varieties of drums, and of stringed instruments akin to the harp and the violin, etc. Indeed all stages necessary for the development of the harp from the simplest form to the instrument as we find it among the ancient Egyptians previous to its dispersal over Asia and Europe are to be met with on African soil, and the attribution of its invention to some Negro people is quite reasonable, on the evidence in hand. And the same thing, with somewhat less certainty, perhaps, may be said of the violin. In the characteristically African *marimba*, or xylophone, we may have the beginnings of the piano and closely related musical instruments, in which case, one of its names, "the Negro piano" assumes a new significance. The "pot drum" so-called, and perhaps another variety or two of that instrument, originated also in Negro Africa. The *goura* of certain South African peoples is a curious musical instrument which still awaits adoption or modification by civilized man.

#### Iron-Smelting, etc.

The *ars artium*, however, of Negro Africa is the use of iron. The question of the origin of the art of iron-smelting is now being treated in detail by ethnologists, and, while general agreement has not been reached, the mass of evidence so far disclosed, has convinced eminent men of science like Boas and von Luschan that the smelting of iron was first discovered by the African Negroes, from whom, by way of Egypt and Asia Minor, this art made its way into Europe and the rest of the Old World. Among the arguments in favor of this view are the fact that, at the time of the contact of the African Negroes with white men for the first time, iron-smelting was common and widespread among them, the work of the smith having almost everywhere reached a somewhat high degree of perfection; the evidence in the hieroglyphic records and elsewhere in ancient Egypt of the derivation of iron from the south at a comparatively late stage of civilization; and the comparative lateness also of its appearance in the ancient cultures of Asia, the Mediterranean region and Northern and Occidental Europe. It should check our racial pride a little to consider the possibility, perhaps, rather, the certainty, that "at a time when our own ancestors still utilized stone implements or, at best, when bronze

implements were first introduced, the Negro had developed the art of smelting iron," and that "his race has contributed more than any other to the early development of the iron industry" (Boas).

### III

The achievements of individual Negroes, taken from Africa in childhood and educated in lands where the Negro was looked upon as a man like the rest is another source of valuable information on our subject. In illustration of the point at issue the following cases may be cited:

*Miguel Kapranzine.* In 1631 the Portuguese finally established as chief of the Kalanga, a Bantu tribe, of Southeast Africa, a native convert, who, a few years before, had been proclaimed by the army and the Dominican missionaries, "Manuza, Emperor of Monomotapa." The Christian forces were completely successful in a great battle, and among the captives taken was the young son of Kapranzine, really the rightful claimant to the throne. This boy was sent to Goa, technically a prisoner, and handed over to the Dominicans of that city to be educated at the expense of the crown. He was baptized by the name of Miguel, became a member of the order of the Dominicans, devoted himself arduously and successfully to study, and won fame as one of the greatest preachers in Portuguese India. In 1670, when he was still in the prime of life, the General of the Dominican Order conferred upon him the degree of Master in Theology, which would correspond to our D. D. When he died, he held the position of Vicar of the convent of Santa Barbara in Goa. As Mr. Theal, the historian of South Africa, observes, "fiction surely has no stranger story than his." From a Kaffir kraal to high office in the religious life of a city, of which the saying went, "If you have seen Goa, you do not need to see Lisbon!"

*J. E. J. Captein.* The story of Jacques Elisa Jean Captein is certainly one of the most interesting in all the long annals of human education. When only seven years of age, he was taken from his home on the Andreas River, in Western Africa, by a slave-trader, who presented him to a friend. This man, when he returned to Holland, brought the Negro boy with him, had him baptized as a Christian, and made arrangements for his education in the best manner of the times. Young Captein proved an excellent scholar, and soon obtained a good knowledge of Latin, Greek, Hebrew and Chaldean. At the University of Leyden he studied theology, obtaining his degree there, in that faculty, in 1742. Afterwards he went as missionary to Elmina in Guinea, a settlement which since 1637, had been in possession of the Dutch. The title of his thesis is worth quoting in full: *Dissertatio politico-theologica de servitute libertati christianae non contraria, quam sub praes. J. van den Honert, publ. disput. subj. J. E. J. Captein, afer. Lugd. Bat. 1742.* This thesis, in which slavery is defended as not contrary to Christian liberty is said to be learned and skilful even for the days in which it was written. Captein also wrote a

Latin elegy on the death of the Rev. Mr. Manger of The Hague, his friend and instructor. He was likewise the author of an appeal to the heathen to accept Christianity, and of a volume of sermons in Dutch, delivered by him at different times in various cities of the country.

A. W. Amo. Even more remarkable was the career of a native of Axim on the Gold Coast, West Africa, known as Anton Wilhelm Amo. When quite young, he was brought as a slave in 1707 to Amsterdam, and was soon afterwards presented by Duke Anton Ulrich von Braunschweig to his son, August Wilhelm, who provided for his education in generous fashion. He attended both the Universities of Halle and Wittenberg. At Halle, he took his degree of Doctor of Philosophy, with a dissertation, *De jure Maurorum*, which is praised in the programme by the Dean of the Philosophical Faculty in these words: *Excussis tam veterum quam novorum placitis, optima quaeque selegit, selecta enucleate ac dilucide interpretatus est.* He was also spoken of as "vir nobilissimus et clarissimus." After taking his degree, he seems to have qualified as a University lecturer, or professor, and to have delivered regular courses. The title of his Inaugural Address at Wittenberg is as follows: *Dissertatio inauguralis philosophica de humanae mentis APATHIA, seu sensationis vel facultatis sentiendi in mente humana absentia, et earum in corpore nostro organico ac vivo praesentia, quam praes. etc. publ. def. autor Ant. Guil. Amo, Guinea-Afer, phil. etc. Mag. Wittenbergae 1734.* It is interesting that this Negro should have chosen "Apathy" as the subject of his discourse. He was also the author of other philosophical treatises in Latin. Like Captein, Amo was noted for his linguistic attainments. He is said to have been able to speak Dutch, German, Latin, Greek, and Hebrew, and was certainly able to write several of these tongues. The Prussian government of the time conferred upon him the high honor of "Geheim-Rat," something over and above his merely scholastic achievements. The death of his benefactor, the Duke of Brunswick, seems to have affected him deeply, and, after some thirty years' residence in Europe, he returned to his home in Africa. There he found that his father and sister were still alive. Amo himself was still living there in isolation in 1753, when he was visited by Dr. D. H. Gallaudat. Here, again, from a Negro hut on the Gold Coast to a degree from one German University and a position in the Faculty of another, and the title of "Excellency" from the Government of the country that was soon to dominate all Central Europe, is a career almost incredible. No wonder Grégoire, in his monograph in defence of the Negro, published at the beginning of the nineteenth century, and the German anatomist, Tiedemann, in his work on the brain of the Negro (1837), cited the cases of Captein and Amo as settling the question of the intellectual capacity of the black man.

*Negroes at the Universities of Portugal and Spain.* The history of Angola under the rule of the Portuguese shows that many Negroes from that part of Africa studied successfully at Coimbra. It may not be out

of place to mention here also the fact that among the distinguished graduates of this ancient institution of learning is to be counted A. C. G. Crespo (1846-1883) poet and man of letters, with both an American and a European reputation, and at one time a member of the Portuguese Chamber of Deputies. His father was a white man, his mother a black slave in Brazil. The University of Seville in Spain is said to have had at one time a Negro as a member of the Faculty, viz., Don Juan Latino, a noted professor of Latin. It is probable that a complete record of the activities of the Universities of Latin Europe would reveal other interesting instances of the participation of Negroes in the academic world.

*Adjai Crowther.* In 1812 there was born at Uchugu, in the Yoruba country of West Africa, a boy named Adjai, whose life is significant for the interpretation of Negro capacities and achievements. At the age of seven, he was carried off by slave traders, passing from hand to hand until 1822, when he was rescued by the Captain of a British frigate, and given over for the purposes of education, to the missionary authorities at Bathurst, the chief place of Gambia, then a part of the colony of Sierra Leone. After three years' study, he became a Christian, adding to his native appellation of Adjai, the name of Samuel Crowther, a clergyman of the Anglican Church. He was afterwards connected with the mission school at Regent's Town and the Fourah Bay College. He also served in Nigeria, and was with the first Niger Expedition in 1841. In 1842 he went to England, and, having studied a year at the Church Missionary College at Islington, was ordained a clergyman of the Anglican Church by the Bishop (Blomfield) of London. Returning to Africa, he labored among his own people at Abbeokuta, etc. He took part in the second and third Niger Expeditions of 1854 and 1857, and, from this time on, contributed much to our knowledge of the geography and the philology of West Africa. While on another visit in 1864 to England, he was consecrated Bishop of the Niger Territory and, when he returned to the scene of his missionary labors, he gathered round him a corps of native assistants and continued active until his death, which occurred, in 1891. Besides being remembered as a missionary and teacher, Bishop Crowther deserves fame as an explorer and geographer, and also as a philologist. The journal of his Niger explorations contains some of the first reliable information concerning the peoples of that region, and, in 1879, the Royal Geographical Society of London, on the motion of Dr. R. N. Cust, voted him a gold watch for his services to geographical science. In 1881 he made a linguistic map of the Niger Region, which was used to good advantage by Mr. Cust in the preparation of his monograph on *The Modern Languages of Africa*. It is to Bishop Crowther that we owe the first knowledge of the existence of some of the numerous languages and dialects of this region of West Africa. He is the author of several religious tracts, school-books, etc., and also of a translation of the Bible and the Prayer-Book in the Yoruba language, his mother-tongue. In 1882 he

again visited England, being received with the honors due him. To have read a paper before a distinguished audience, under the auspices of the Royal Geographical Society, was a great distinction for one who had been a slave in far-off West Africa. To receive the degree of D. D. from the famous University of Oxford was one still greater. Many of the details of this man's remarkable life may be read in his autobiography, published at London, in 1888, under the title of the *Slave boy who became Bishop*. Dr. Cust does not hesitate to say that he was "fully the equal of the European in intellect," and his achievements surely lifted him far above the average. The same thing might be said also of some of his colleagues and co-adjutors, such, *e. g.*, as Archdeacon Johnson, etc.

The cases of individuals like Miguel Kapranzine, Captein, Arno and Crowther show what had been accomplished when the Negro has been treated as a man, even when the things to be done, and the criteria of judgment concerning their accomplishment and value belong not to his own, but to our race. Such things as these, together with the facts to be won from the study of Negro culture in Africa itself, and with the undoubted evidence of progress displayed by the Negro in America since the days of slavery, prove alike the generically human endowment of the black race and its capacity for specific culture-development. . . .

## VIII

### Race Problems in the United States<sup>1</sup>

By Franz Boas

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We will now turn to the question what these results of our inquiry teach us in regard to the problems that confront our modern civilization, particularly our nation. The development of the American nation through the amalgamation of diverse European nationalities, the presence of the Negro, Indian, and Chinese, and the whole ever-increasing heterogeneity of the component elements of our people, involve a number of problems to the solution of which our inquiries contribute important data.

Our previous considerations make clear the hypothetical character of many of the generally accepted assumptions, and indicate that not all of the questions involved can be answered at the present time with scientific accuracy. It is disappointing that we have to take this critical attitude, because the political question of dealing with all these groups of people is of great and immediate importance. However, it should be solved on the basis of scientific knowledge, not according to emotional clamor. Under present conditions, we seem to be called upon to formulate definite an-

<sup>1</sup> Reprinted, by permission of the author and publisher, from *The Mind of Primitive Man*, pp. 251-278. Copyright (1911) by The Macmillan Co., New York.



swers to questions that require the most painstaking and unbiased investigation; and the more urgent the demand for final conclusions, the more needed is a critical examination of the phenomena and of the available methods of solution.

Let us first represent to our minds the facts relating to the origins of our nation. When British immigrants first flocked to the Atlantic coast of North America, they found a continent inhabited by Indians. The population of the country was thin, and vanished comparatively rapidly before the influx of the more numerous Europeans. The settlement of the Dutch on the Hudson, of the Germans in Pennsylvania, not to speak of other nationalities, is familiar to all of us. We know that the foundations of our modern state were laid by Spaniards in the Southwest, by French in the Mississippi Basin and in the region of the Great Lakes, but that the British immigration far outnumbered that of other nationalities. In the composition of our people, the indigenous element has never played an important rôle, except for very short periods. In regions where the settlement progressed for a long time entirely by the immigration of unmarried males of the white race, families of mixed blood have been of some importance during the period of gradual development, but they have never become sufficiently numerous in any populous part of the United States to be considered as an important element in our population. Without any doubt, Indian blood flows in the veins of quite a number of our people, but the proportion is so insignificant that it may well be disregarded.

Much more important has been the introduction of the Negro, whose numbers have increased many fold, so that they form now about one-eighth of our whole nation. For a certain length of time the immigration of Asiatic nations seemed likely to become of importance in the development of our country, but the political events of recent years have tended to decrease their immediate importance considerably, although we do not venture to predict that the relation of Asiatics and white Americans may not become a most important problem in the future. These facts, however, are familiar to all of us, and stand out clearly to our minds.

More recent is the problem of the immigration of people representing all the nationalities of Europe, western Asia, and northern Africa. While until late in the second half of the nineteenth century the immigrants consisted almost entirely of people of northwestern Europe, natives of Great Britain, Scandinavia, Germany, Switzerland, Holland, Belgium, and France, the composition of the immigrant masses has changed completely since that time. With the economic development of Germany, German immigration has dwindled down; while at the same time Italians, the various Slavic peoples of Austria, Russia, and the Balkan Peninsula, Hungarians, Roumanians, East European Hebrews, not to mention the numerous other nationalities, have arrived in ever increasing numbers. There is no doubt that these people of eastern and southern Europe repre-

sent physical types distinct from the physical type of northwestern Europe; and it is clear, even to the most casual observer, that their present social standards differ fundamentally from our own. Since the number of new arrivals may be counted in normal years by hundreds of thousands, the question may well be asked, What will be the result of this influx of types distinct from our own, if it is to continue for a considerable length of time?

It is often claimed that the phenomenon of mixture presented in the United States is unique; that a similar intermixture has never occurred before in the world's history; and that our nation is destined to become what some writers choose to term a "mongrel" nation in a sense that has never been equalled anywhere.

When we try to analyze the phenomenon in greater detail, and in the light of our knowledge of conditions in Europe as well as in other continents, this view does not seem to me tenable. In speaking of European types, we are accustomed to consider them as, comparatively speaking, pure stocks. It is easy to show that this view is erroneous. It is only necessary to look at a map illustrating the racial types of any European country—like Italy, for instance—to see that local divergence is the characteristic feature, uniformity of type the exception. Thus Dr. Ridolfo Livi, in his fundamental investigations on the anthropology of Italy, has shown that the types of the extreme north and of the extreme south are quite distinct,—the former tall, short-headed, with a considerable sprinkling of blond and blue-eyed individuals; the latter short, long-headed and remarkably dark. The transition from one type to the other is, on the whole, quite gradual; but, like isolated islands, distinct types occur here and there. The region of Lucca in Tuscany, and the district of Naples, are examples of this kind, which may be explained as due to the survival of an older stock, to the intrusion of new types, or to a peculiar influence of environment.

Historical evidence is quite in accord with the results derived from the investigation of the distribution of modern types. In the earliest times we find on the peninsula of Italy groups of heterogeneous people, the linguistic relationships of many of which have remained obscure up to the present time. From the earliest prehistoric times on, we see wave after wave of people invading Italy from the north. Very early Greeks settled in the greater part of southern Italy, and Phœnician influence was well established on the west coast of the peninsula. A lively intercourse existed between Italy and northern Africa. Slaves of Berber blood were imported, and have left their traces. Slave trade continued to bring new blood into the country until quite recent times, and Livi believes that he can trace the type of Crimean slaves who were introduced late in the middle ages in the region of Venice. In the course of the centuries, the migrations of Celtic and Teutonic tribes, the conquests of the Normans, the contact with Africa, have added their share to the mixture of people on the Italian peninsula.

The fates of other parts of Europe were no less diversified. The Pyrenæan Peninsula, which at present seems to be one of the most isolated parts of Europe, had a most checkered history. The earliest inhabitants of whom we know were presumably related to the Basques of the Pyrenees. These were subjected to Oriental influences in the pre-Mycenaean period, to Punic influences, to Celtic invasions, Roman colonization, Teutonic invasions, the Moorish conquest, and later on to the peculiar selective process that accompanied the driving-out of the Moors and the Jews.

England was not exempt from vicissitudes of this kind. It seems plausible that at a very early period the type which is now found principally in Wales and in some parts of Ireland occupied the greater portion of the islands. It was swamped by successive waves of Celtic, Roman, and Anglo-Saxon migration. Thus we find change everywhere.

The history of the migrations of the Goths, the invasions of the Huns, who in the short interval of one century moved their habitations from the borders of China into the very centre of Europe, are proofs of the enormous changes in population that have taken place in early times.

Slow colonization has also brought about fundamental changes in blood as well as in diffusion of languages and cultures. Perhaps the most striking recent example of this change is presented by the gradual Germanization of the region east of the Elbe River, where, after the Teutonic migrations, people speaking Slavic languages had settled. The gradual absorption of Celtic communities, of the Basque, in ancient times the great Roman colonization, and later the Arab conquest of North Africa, are examples of similar processes.

Intermixture in early times was not by any means confined to peoples which, although diverse in language and culture, were of fairly uniform type. On the contrary, the most diverse types of southern Europe, northern Europe, eastern Europe, and western Europe, not to mention the elements which poured into Europe from Asia and Africa, have been participants in this long-continued intermixture.

There is, however, one fundamental difference in regard to the early European migrations and the modern transatlantic migration. On the whole, the former took place at a period when the density of population was, comparatively speaking, small. There is no doubt that the number of individuals concerned in the formation of the modern types of Great Britain were comparatively few as compared with the millions who come together to form a new nation in the United States; and it is obvious that the process of amalgamation which takes place in communities that must be counted by millions differs in character from the process of amalgamation that takes place in communities that may be counted by thousands. Setting aside social barriers, which in early times as well as now undoubtedly tended to keep intermingling peoples separate, it would seem that in the more populous communities of modern times a greater

permanence of the single combining elements might occur, owing to their larger numbers, which make the opportunities for segregation more favorable.

Among the smaller communities the process of amalgamation must have been an exceedingly rapid one. After the social distinctions have once been obliterated, pure descendants of one of the component types decrease greatly in number, and the fourth generation of a people consisting originally of distinct elements will be almost homogeneous. I shall revert to this phenomenon later on.

It might be objected to this point of view, that the very diversity of local types in Europe proves the homogeneity of race types—as, for instance, of the northwestern European type, the Mediterranean type, the East European type, or the Alpine type,—but it must be remembered that we have historical proof of the process of mixture, and that the relative number of component elements is sufficient to account for the present conditions.

I think we may dismiss the assumption of the existence of a pure type in any part of Europe, and of a process of mongrelization in America different from anything that has taken place for thousands of years in Europe. Neither are we right in assuming that the phenomenon is one of a more rapid intermixture than the one prevailing in olden times. The difference is based essentially in the masses of individuals concerned in the process.

If we confine our consideration for the present to the intermixture of European types in America, I think it will be clear, from what has been said before, that the concern that is felt by many in regard to the continuance of racial purity of our nation is to a great extent imaginary. The history of Europe proves that there has been no racial purity anywhere for exceeding long periods, neither has the continued intermixture of European types shown any degrading effect upon any of the European nationalities. It would be just as easy to prove that those nations that have been least disturbed have lacked the stimulus to further advance, and have passed through periods of quiescence. The history of Spain might be interpreted as an instance of an occurrence of this kind.

The question as to the actual effects of intermixture will not, however, be answered by a generalized historical treatment such as we have attempted here. The advocates of the theory of a degradation of type by the influx of so-called "lower" types, will not be silenced by reference to earlier mixtures in Europe, the course of which can no longer be traced in actual detail; for we do not know to what extent actual intermarriages have taken place, and what the development of families of mixed descent as compared with those of pure descent has been. It seems necessary that the problems should be approached from a biological standpoint. It has seemed well, however, to gain first a clearer view of the historical relations of our problem. A knowledge of the events of the past

tends to lay our apprehensions, that make the problem exciting, and which for this reason fill the observer with a strong bias for the results which he fears or desires.

Two questions stand out prominently in the study of the physical characteristics of the immigrant population. The first is the question of the influence of selection and environment in the migration from Europe to America. The second is the question of the influence of intermixture.

We have been able to throw some light upon both of these.

We found that the types which come to our shores do not remain stable, but show such important modifications, that many of the differences of the human types of Europe seem rather ephemeral than permanent, determined more by environment than by heredity. The characteristics which belong to influences of environment belong to the most fundamental traits of the body. Stature, form of head, and size of face, seem to be equally subject to these influences; and the modifications are the more marked, the less developed the organ in question at the time of birth, the longer it is therefore subject to the influences of environment. This fact allows us to assert with a high degree of confidence that mental traits as well as physical traits will be modified by the effect of environment. When, furthermore, we recall that we could not discover any proofs of the superiority of one type over another, we may feel safe when we state that the dangers to the vigor of the American nation, due to an influx of alien European types, is imaginative, not real.

A number of data have also been obtained for a better understanding of the significance of race-mixture. Let us recall that one of the most powerful agents modifying human types is the 'breaking-up' of the continuance of certain strains in small communities by a process of rapid migration, which occurs both in Europe and in America, but with much greater rapidity in our country, because the heterogeneity of descent of the people is much greater than in the countries of Europe.

What effect these processes may have upon the ultimate type and variability of the American people cannot be determined at the present time; but no evidence is available that would allow us to expect a lower status of the developing new types of America. Much remains to be done in the study of this subject; and, considering our lack of knowledge of the most elementary facts that determine the outcome of this process, I feel that it behooves us to be most cautious in our reasoning, and particularly to refrain from all sensational formulations of the problem that are liable to add to the prevalent lack of calmness in its consideration; the more so, since the answer to these questions concerns the welfare of millions of people.

The problem is one in regard to which speculation is as easy as accurate studies are difficult. Basing our argument on ill-fitting analogies with the animal and plant world, we may speculate on the effects of intermixture upon the development of new types—as though the mixture

that is taking place in America were in any sense, except a sociological one, different from the mixtures that have taken place in Europe for thousands of years; looking for a general degradation, for reversion to remote ancestral types, or towards the evolution of a new ideal type—as fancy or personal inclination may impel us. We may enlarge on the danger of the impending submergence of the northwest European type, or glory in the prospect of its dominance over all others. Would it not be a safer course to investigate the truth or fallacy of each theory rather than excite the public mind by indulgence in the fancies of our speculation? That these are an important help in the attainment of truth, I do not deny; but they must not be promulgated before they have been subjected to a searching analysis, lest the credulous public mistake fancy for truth.

If I am not in a position to predict what the effect of mixture of distinct types may be, I feel confident that this important problem may be solved if it is taken up with sufficient energy and on a sufficiently large scale. An investigation of the anthropological data of people of distinct types,—taking into consideration the similarities and dissimilarities of parents and children, the rapidity and final result of the physical and mental development of children, their vitality, the fertility of marriages of different types and in different social strata,—such an investigation is bound to give us information which will allow us to answer these important questions definitely and conclusively.

The final result of race-mixture will necessarily depend upon the fertility of the present native population and of the newer immigrants. It has been pointed out repeatedly that the birth-rate of Americans has declined with great rapidity, and that in the second and third generations of descendants of immigrants the same decline makes itself felt. It will therefore be important to know what the fertility of different types may be.

If the fertility of foreigners continues high without a corresponding higher death-rate of children, we may anticipate a gradual increase of the physical influence of the more fertile type. The immigration of the divergent types of southern and eastern Europe is, however, so recent, that this question cannot be answered until at least twenty years more have elapsed.

No less important than the fertility of each immigrant type by itself is the question in how far they tend to intermarry. The data presented in our census reports do not give a clear insight into this tendency among various nationalities. The difficulties of collecting significant statistics on the problem are very great. They appear particularly clearly in the case of Italians. Married men from Italy come to the United States, earn some money, and go back to rejoin their families. They may come again, and, when conditions are propitious, they may finally send for their families to follow them. Thus we find among the Italian immigrants

very large numbers who were married before they came here. It seems almost impossible to separate the contingent of couples married before their arrival here from those married after their arrival, and the chief point of interest to us lies in the intermarriages of children born in this country. It is natural that in large cities, where nationalities separate in various quarters, a great amount of cohesion should continue for some time; but it seems likely that intermarriages between descendants of foreign nationalities are much more common than the census figures would make it appear. Our experience with Americans whose grandparents immigrated into this country is, on the whole, that most social traces of their descent have disappeared, and that many do not even know to what nationalities their grandparents belonged. It might be expected—particularly in Western communities, where a rapid change of location is common—that this would result in a rapid mixture of the descendants of various nationalities. This inquiry, which it is quite feasible to carry out in detail, seems indispensable for a clear understanding of the situation.

It is somewhat difficult to realize how rapidly intermixture of distinct types takes place if the choice of mates is left entirely to accident. I have made this calculation, and I find that in a population in which two types intermingle, and in which both types occur with equal frequency, there will be in the fourth generation less than one person in ten thousand of pure descent. When the proportion of the two original types is as eight to one, there will be among the more numerous part of the population less than thirty in one thousand in the fourth generation that will be of pure blood. Taking these data as a basis, it is obvious that intermixture, as soon as the social barriers have been removed, must be exceedingly rapid; and I think it safe to assume that one hundred years from now, in the bulk of our population, very few pure descendants of the present immigrants will be found.

Unfortunately, however, we do not know the influence of racial cohesion. Obviously this is one of the fundamental points that ought to be known in order to gain a clear insight into the effect of recent immigration. Without this information, the whole discussion of the effect of intermixture remains speculative. The results of the present census will give us a certain amount of much-needed information on these points.

In these remarks on the problems of European immigration I have confined myself entirely to the biological problem, because all our considerations have shown conclusively that mental life is so plastic, that no hereditary inability can be assumed to exist in any of the peoples of Europe.

When we turn our attention to the Negro problem as it presents itself in the United States, we must remember our previous considerations, in which we found that no proof of an inferiority of the Negro type could be given, except that it seemed possible that perhaps the race would

not produce quite so many men of highest genius as other races, while there was nothing at all that could be interpreted as suggesting any material difference in the mental capacity of the bulk of the Negro population as compared to the bulk of the white population.

Much has been said about the shorter period of growth of the Negro child as compared to the white child, but no convincing data have been forthcoming. Considering the great variation in the duration of growth and development in different individuals and in various social classes, according to the more or less favorable nutrition of the child, the information that we possess in regard to the Negro child, is practically without value. We have not even evidence that would prove that a shorter period of development must be unfavorable in its results. Neither do we know at what period and in what manner develop the typical Negroid features, which are much less pronounced in the new-born than in adults.

It is surprising, that, notwithstanding their importance, no attempts have been made to gain a better insight into these anatomical and physiological problems, some of which might be solved without much difficulty. As it is, almost all we can say with certainty is, that the differences between the average types of the white and of the Negro, that have a bearing upon vitality and mental ability, are much less than the individual variations in each race.

This result is, however, of great importance, and is quite in accord with the result of ethnological observation. A survey of African tribes exhibits to our view cultural achievements of no mean order. To those unfamiliar with the products of native African art and industry, a walk through one of the large museums of Europe would be a revelation. None of our American museums has made collections that exhibit this subject in any way worthily. The blacksmith, the wood-carver, the weaver, the potter,—these all produce ware original in form, executed with great care, and exhibiting that love of labor, and interest in the results of work, which are apparently so often lacking among the Negroes in our American surroundings. No less instructive are the records of travelers, reporting the thrift of the native villages, of the extended trade of the country, and of its markets. The power of organization as illustrated in the government of native states is of no mean order, and when wielded by men of great personality has led to the foundation of extended empires. All the different kinds of activities that we consider valuable in the citizens of our country may be found in aboriginal Africa. Neither is the wisdom of the philosopher absent. A perusal of any of the collections of African proverbs that have been published will demonstrate the homely practical philosophy of the Negro, which is often proof of sound feeling and judgment.

It would be out of place to enlarge on this subject, because the essential point that anthropology can contribute to the practical discussion of the adaptability of the Negro is a decision of the question how far the



undesirable traits that are at present undoubtedly found in our Negro population, are due to racial traits, and how far they are due to social surroundings for which we are responsible. To this question anthropology can give the decided answer that the traits of African culture as observed in the aboriginal home of the Negro are those of a healthy primitive people, with a considerable degree of personal initiative, with a talent for organization, and with imaginative power, with technical skill and thrift. Neither is a warlike spirit absent in the race, as is proved by the mighty conquerors who overthrew states and founded new empires, and by the courage of the armies that follow the bidding of their leaders. There is nothing to prove that licentiousness, shiftless laziness, lack of initiative, are fundamental characteristics of the race. Everything points out that these qualities are the result of social conditions rather than of hereditary traits.

It may be well to state here once more with some emphasis that it would be erroneous to assume that there are no differences in the mental make-up of the Negro race and of other races, and that their activities should run in the same lines. On the contrary, if there is any meaning in correlation of anatomical structure and physiological function, we must expect that differences exist. There is, however, no evidence whatever that would stigmatize the Negro as of weaker build, or as subject to inclinations and powers that are opposed to our social organization. An unbiased estimate of the anthropological evidence so far brought forward does not permit us to countenance the belief in a racial inferiority which would unfit an individual of the Negro race to take his part in modern civilization. We do not know of any demand made on the human body or mind in modern life that anatomical or ethnological evidence would prove to be beyond the powers of the Negro.

The traits of the American Negro are adequately explained on the basis of his history and social status. The tearing-away from the African soil and the consequent complete loss of the old standards of life, which were replaced by the dependency of slavery and by all it entailed, followed by a period of disorganization and by a severe economic struggle against heavy odds, are sufficient to explain the inferiority of the status of the race, without falling back upon the theory of hereditary inferiority.

In short, there is every reason to believe that the Negro, when given facility and opportunity, will be perfectly able to fulfill the duties of citizenship as well as his white neighbor. It may be that he will not produce as many great men as the white race, and that his average achievement will not quite reach the level of the average achievement of the white race; but there will be endless numbers who will be able to outrun their white competitors, and who will do better than the defectives whom we permit to drag down and retard the healthy children of our public schools.

The anthropological discussion of the Negro problem requires also a word on the "race instinct" of the whites, which plays a most import-

ant part in the practical aspect of the problem. Ultimately this phenomenon is a repetition of the old instinct and fear of the connubium of patricians and plebeians, of the European nobility and the common people, or of the castes of India. The emotions and reasonings concerned are the same in every respect. In our case they relate particularly to the necessity of maintaining a distinct social status in order to avoid race-mixture. As in the other cases mentioned, the so-called instinct is not a physiological dislike. This is proved by the existence of our large mulatto population, as well as by the more ready amalgamation of the Latin peoples. It is rather an expression of social conditions that are so deeply ingrained in us that they assume a strong emotional value; and this, I presume, is meant when we call such feelings instinctive. The feeling certainly has nothing to do with the question of the vitality and ability of the mulatto.

Still the questions of race-mixture and of the Negro's adaptability to our environment represent a number of important problems.

I think we have reason to be ashamed to confess that the scientific study of these questions has never received the support either of our government or of any of our great scientific institutions; and it is hard to understand why we are so indifferent toward a question which is of paramount importance to the welfare of our nation. The anatomy of the American Negro is not well known; and, notwithstanding the oft-repeated assertions regarding the hereditary inferiority of the mulatto, we know hardly anything on this subject. If his vitality is lower than that of the full-blooded Negro, this may be as much due to social causes as to hereditary causes. Owing to the very large number of mulattoes in our country, it would not be a difficult matter to investigate the biological aspects of this question thoroughly. The importance of researches on this subject cannot be too strongly urged, since the desirability or undesirability of race-mixture should be known. Looking into a distant future, it seems reasonably certain that with the increasing mobility of the Negro, the number of full-bloods will rapidly decrease; and since there is no introduction of new Negro blood, there cannot be the slightest doubt that the ultimate effect of the contact between the two races must necessarily be a continued increase of the amount of white blood in the Negro community.

This process will go on most rapidly inside of the colored community, owing to intermarriages between mulattoes and full-blooded Negroes. Whether or not the addition of white blood to the colored population is sufficiently large to counterbalance this levelling effect, which will make the mixed bloods with a slight strain of Negro blood darker, is difficult to tell; but it is quite obvious that, although our laws may retard the influx of white blood considerably, they cannot hinder the gradual progress of intermixture. If the powerful caste system of India has not been able to prevent intermixture, our laws, which recognize a greater amount of

individual liberty, will certainly not be able to do so; and that there is no racial sexual antipathy is made sufficiently clear by the size of our mulatto population. A candid consideration of the manner in which intermixture takes place shows very clearly that the probability of the infusion of white blood into the colored population is considerable. While the large body of the white population will always, at least for a very long time to come, be entirely remote from any possibility of intermixture with Negroes, I think that we may predict with a fair degree of certainty a condition in which the contrast between colored people and whites will be less marked than it is at the present time. Notwithstanding all the obstacles that may be laid in the way of intermixture, the conditions are such that the persistence of the pure Negro type is practically impossible. Not even an excessively high mortality and lack of fertility among the mixed type, as compared with the pure types, could prevent this result. Since it is impossible to change these conditions, they should be faced squarely, and we ought to demand a careful and critical investigation of the whole problem.

It seems to my mind that the policy of many of our Southern States that try to prevent all racial intermixture is based on an erroneous view of the process involved. The alleged reason for this type of legislation is the necessity of protecting the white race against the infusion of Negro blood. As a matter of fact, this danger does not exist. With very few exceptions, the unions between whites and Negroes are those of white men and Negro women. The increase of races, however, is such that the number of children born does not depend upon the number of men, but upon the number of women. Given, therefore, a certain number of Negro women, the increase of the colored population will depend upon their number; and if a considerable number of their children are those of white fathers, the race as a whole must necessarily lose its pure Negro type. At the same time no such infusion of Negro blood into the white race through the maternal line occurs, so that the process is actually one of lightening the Negro race without corresponding admixture in the white race.

It appears from this consideration that the most important practical questions relating to the Negro problem have reference to the mulattoes and other mixed bloods,—to their physical types, their mental and moral qualities and their vitality. When the bulky literature of this subject is carefully sifted, little remains that will endure serious criticism; and I do not believe that I claim too much when I say that the whole work on this subject remains to be done. The development of modern methods of research makes it certain that by careful inquiry definite answers to our problems may be found. Is it not, then, our plain duty to inform ourselves, that, so far as that can be done, deliberate consideration of observations may take the place of heated discussion of beliefs in matters that concern not only ourselves, but also the welfare of millions of Negroes?



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